Hotel Carbon Measurement Initiative (HCMI)

Methodology Standard v3.0

In support of

Glasgow Declaration
Climate Action in Tourism

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https://sustainablehospitalityalliance.org/resource/hotel-carbon-measurement-initiative/

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1 HCMI was first developed when the World Sustainable Hospitality Alliance was known as the International Tourism Partnership (ITP).

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1.0 Introduction

1.1 Creation of HCMI

In June 2012, the World Sustainable Hospitality Alliance (WSHA) and the World Travel & Tourism Council (WTTC), with 23 global hospitality companies, launched the Hotel Carbon Measurement Initiative (HCMI) version 1.0 to consistently calculate and communicate the carbon footprint of hotel stays and meetings. This methodology supports the objectives of the Glasgow Declaration on Climate Action in Tourism (2021). In 2022, WSHA updated the methodology to v2.0 and designed it to be consistent with the principles of the Greenhouse Gas (GHG) Protocol. In late 2025, WSHA began revising HCMI to address evolving industry needs and best practices, and to serve as a voluntary carbon accounting and reporting methodology standard for hotels. This latest version includes:

- Defined boundaries, quantification, and metrics to encompass additional Scope 3 value chain emissions of a hotel.
- Further consistency in calculation for more accurate comparability among hotels.
- Increased consistency with the principles of the GHG Protocol and other industry-standard carbon accounting practices.
- Improved data quality and reliability through strengthened audit-readiness and review processes, and compatibility with future assurance and verification.

The following methodology attempts to strike a balance between ease of implementation and accuracy. It is designed to be applicable to hotels of all types worldwide, even those with no prior experience in carbon reporting. The methodology is not an assessment of all environmental risks and opportunities that hotels face and is only a first step in implementing a thorough environmental programme. The methodology is a voluntary approach to measuring GHG emissions. A number of other organisations provide guidance on activities such as carbon neutrality, product life-cycle assessment (LCA), and energy management, which are outside the scope of this document.

The Hotel Carbon Measurement Initiative demonstrates how effective collaboration can provide solutions which benefit customers, individual companies, and the wider industry. Through common measurement and language, stakeholders will now be able to better understand their impacts.

1.2 Who is HCMI for?

HCMI is designed for hotel owners, operators, brands, and asset managers seeking a consistent, comparable method to measure and report carbon emissions across properties, portfolios, and hotel classes around the world, regardless of amenities, size, or location. It also serves brands, investors, lenders, and sustainability teams who need credible, decision-useful emissions data to inform strategy, investment, and performance management.

Additionally, HCMI supports guests, travel buyers, policymakers, industry associations, and program administrators by providing a common GHG emission metric, tonnes of carbon dioxide equivalent (tCO2e), that enables benchmarking, target-setting, and accountability across the hospitality sector.

Separately, but complementary to HCMI, Appendix 6 provides an informative example of how to calculate energy consumption per area, following the same principles as this Standard.

1.3 HCMI Tool

The HCMI methodology has historically been supported by an Excel-based calculation tool. A supporting calculation tool aligned with this Standard is under development and will be made available when released.

Use or application of this methodology does not constitute certification, approval, verification, or endorsement by the World Sustainable Hospitality Alliance unless such verification has been formally conducted through WSHA's published assurance arrangements.

1.4 Forthcoming enhancements to HCMI

As international regulations and disclosures evolve, along with changes to the GHG Protocol, subsequent versions of the HCMI methodology will be revised to ensure best practice is followed. WSHA will maintain ongoing conversations with its members and other stakeholders to identify potential options for HCMI enhancements.

WSHA will review this Standard at least every five years and may update it sooner where relevant to reflect material changes in best practice or external requirements.

1.5 Relation to other WSHA Programmes

HCMI underpins WSHA's Net Positive Hospitality Pathway by providing a consistent methodology to measure and track hotel carbon emissions over time. This standardized data enables WSHA and its members to establish a comparable baseline, identifying hotspots, prioritising high-impact actions, and monitoring progress in relation to the "GHG emissions and energy" topic area, alongside other WSHA programmes and metrics.

HCMI also supports WSHA's Universal Sustainability key performance indicators (KPIs) by translating hotel operational data into a consistent and comparable emissions metric across properties and portfolios. By standardizing boundaries, calculation rules and outputs, HCMI is intended to strengthen the credibility and comparability of reported data across geographies and ownership types and to enable integration alongside other core KPIs, subject to the boundary, disclosure, and data quality requirements of this Standard.

For clarity, HCMI is a hotel property-level GHG measurement and reporting methodology standard. It is not a corporate inventory standard, not a full life-cycle hotel footprint methodology, and not a claims, certification, or assurance scheme. Any such claims, if made, must be substantiated and communicated separately in line with applicable requirements and WSHA's published claims and assurance arrangements.

2.0 Brief Overview of the Standard

The methodology standard provides hotels with a carbon footprint:

- Per occupied room-night (ORN).
- Per area of meeting space on an hourly basis.

This information can then be used to calculate the carbon footprint of a specific client's use of the hotel (i.e., number of room nights and usage of meeting rooms). These metrics can be particularly useful for hotels completing ***Request for Proposals (RFPs***) from potential clients and for surveys from online travel agency platforms (OTAs). Additional metrics can be calculated for other reporting systems or internal uses, such as carbon footprint per guest night and per property area on an annual basis.

The methodology includes all energy used on site and, where applicable, selected Scope 3 GHG emissions from purchased goods and services, including outsourced laundry, food and beverage, housekeeping, landscaping, and repairs and maintenance; upstream fuel- and energy-related activities; and waste. These activities comprise a significant source of emissions and are a key area of many hotels' environmental programmes. The methodology recognises that some hotels house a number of different facilities and so to improve comparability it excludes any emissions from private areas, i.e., ***private space*** which is not accessible by guests, and excludes private space from the denominator for area-based metrics.

GHG emissions for the whole of a hotel, minus private space, are then allocated proportionally to guest rooms and meeting spaces on a consistent basis. For reporting periods through 2025, HCMI core intensity metrics shall be reported for Scope 1 and Scope 2 emissions. Reporting of Scope 3 Categories 1, 3, and 5 is optional but strongly encouraged. From the 2026 reporting period onward, HCMI core intensity metrics shall include Scope 1, Scope 2, and the selected Scope 3 categories covered by this Standard.

Carbon dioxide (CO2) is the most prevalent GHG, but methane (CH4) and nitrous oxide (N2O) are also harmful to the climate. As such, GHG emissions are often reported as CO2-equivalents (CO2e). These emissions are calculated based on energy sources using conversion factors recommended by the GHG Protocol. The methodology's practicality was originally tested with hotels of different types, classes, geographies, and ownerships through targeted stakeholder engagement to incorporate feedback from the travel and tourism industry.

2.1 Relationship with other Sustainability Standards

GHG Protocol: The HCMI methodology is intended to be compatible with the GHG Protocol's principles of relevance, completeness, consistency, transparency, and accuracy. The HCMI methodology defines:

- The reporting period and boundaries: Entire hotel (minus any private space) using the operational control approach.
- ***Scope of emissions***: Scope 1 and 2 are **required** elements of HCMI. Scope 3 Categories 1, 3, and 5 are **optional** but highly recommended during reporting periods through 2025. During reporting periods 2026 and onward, Scope 1, 2, and these selected Scope 3 categories emissions will be **required**.
    - These Scope 3 Categories are particularly included because they help level the playing field across areas or operations of the hotel that may not be visible to the guest, are significant, contribute to the hotel's GHG risk exposure, are deemed critical to stakeholders, and the potential emissions reductions can be

influenced by the hotel.[2]

- Exclusions from the boundary such as private space, on-site staff accommodation, and space leased to 3rd party not related to the hotel.
- On-site generation and purchase of renewable energy; and
- Treatment of carbon offsets.

The HCMI methodology is consistent with the principles of the GHG Protocol's *Corporate Standard,* but it calculates emissions at the individual hotel level, not at the corporate level. The HCMI methodology is consistent with the principles of the GHG Protocol's Product Life Cycle Standard in so far as it calculates GHG emissions resulting from the running of a hotel, but it does not calculate the emissions of the full life cycle of the hotel, such as its construction materials, fittings, and amenities including raw materials, manufacturing, transportation, storage, use, and disposal. The HCMI methodology incorporates the *GHG Protocol Scope 2 guidance*[3] to enable hotels to report on their use of renewable energy and electricity using the market-based accounting method to account for renewable energy via market mechanisms or onsite generation, and to use the location-based accounting method to calculate emissions in a geographically-comparable format. HCMI also offers a simplified method for hotels to aggregate and communicate on their use of renewable energy and electricity. Further background information on climate change and GHG emissions can be found on the GHG Protocol website (www.ghgprotocol.org).

ISO14064: HCMI was designed to be consistent with the principles of ISO14064-1[4] and includes requirements for determining boundaries, quantifying GHG emissions, and reporting data at the individual hotel level. HCMI, however, does not require hotels to disclose specific activities aimed at improving GHG management or provide guidance on quality management of the GHG inventory. HCMI v3.0 is designed to be compatible with external verification for hotel emissions data, which was not present in earlier versions, which only recommended an internal review process. Any external verification should follow WSHA's published assurance system (when available). Throughout this document, HCMI is consistent with the International Organization for Standardization (ISO) guidance in use of the following terms:

- "Shall" reflects mandatory requirements within the standard.
- "Should" indicates recommendations.
- "Can" and "May" indicate actions that are feasible or permissible, but are not required or necessarily recommended.

ISEAL: HCMI v3.0 was developed with reference to the ISEAL Code of Good Practice for Sustainability Systems (the ISEAL Code).[5] *Please note that all words in* ***bold and italics*** *are defined in Appendix 1.*

[2] Other Scope 3 Categories are omitted as they are judged to be more properly assigned to the corporate level (e.g., business travel, investments) or are not regularly part of the operations of a hotel (e.g., use of sold products). Scope 3 Categories included may be revisited in future HCMI updates.
[3] See example p50 of: https://ghgprotocol.org/sites/default/files/standards/Scope%202%20Guidance_Final_Sept26.pdf
[4] ISO 14064 is an international standard against which GHG emissions reports are voluntarily verified. Part 1 (ISO 14064-1:2018) specifies principles and requirements at the organisation level for quantification and reporting of greenhouse gas (GHG) emissions and removals. It includes requirements for the design, development, management, reporting and verification of an organisation's GHG inventory.
[5] ISEAL Alliance is an international organisation developing standards for sustainability systems.

3.0 Boundaries

Reporting boundaries define what should be included in the hotel's carbon footprint. The methodology requires hotels to report Scope 1 and Scope 2 emissions resulting from activities within the hotel boundary. It also covers selected Scope 3 Categories 1, 3, and 5 in accordance with the phased transition set out in this Standard. Within the premises includes hotel-related restaurants, meeting spaces, shops, casinos, golf courses, spas, garden space, fitness centres, '***back of house'***, and any other amenities that are located within the hotel's premises. ***Private space*** is the one exception to this rule.

Private space: GHG emissions from areas which are not accessible to hotel guests or conference attendees (e.g., private apartments) or not related to the hotel (e.g., spaces leased to a third party where activities are not related to the hotel and/or are outside the hotel's operational control, such as restaurants, shops, hairdressers, etc.) should be excluded from the calculations. On-site staff accommodation is also considered private space.

The energy consumption of these private areas may be included in the hotel's energy bills (and measured through the hotel's meters). However, they operate separately from the hotel, and their energy consumption should be subtracted from the hotel's total. This is calculated by either:

- Subtracting the ***sub-metered*** energy consumption of the private space (if all energy sources used in the private areas are sub-metered); or
- Subtracting a percentage of energy consumption based on the area apportionment of private ***conditioned space*** compared to the total conditioned space.

Note: if the private areas are metered and billed separately, then the hotel does not need to undertake any calculations, as the private areas' energy consumption would already be excluded from the hotel's own energy consumption. Additionally, utilizing sub-metered data, if available, is preferred as it will provide a more accurate consumption value for both spaces.

The methodology does not include the activities of suppliers outside of the hotel's premises (except the noted Scope 3 categories below), the guests' travel to your hotel, or employees' business travel and commuting in non-company cars.

Scope 3

Scope 3 requirements are divided into two phases. During Phase 1, reporting periods through 2025, Scope 3 is optional but highly recommended. During Phase 2, reporting periods 2026 and onward, Scope 3 is required. Where Scope 3 Categories 1, 3, and 5 are reported, the following boundaries shall be applied during Phase 1; from the 2026 reporting period onward, these categories shall be included in HCMI outputs.

Scope 3 Category 1 (Purchased goods and services): Certain material goods and services purchased by the hotel for use within the premises, and not for private space or private use, should be included in the overall footprint. These expense categories include the following:

1. ***Outsourced laundry***: Emissions associated with laundry can make up a significant portion of a hotel's overall carbon footprint. Laundry has been a very high-profile item in hotels' environmental activities for years. However, many hotels outsource some or all of their laundry activity. GHG emissions from outsourced laundry operations should be included in a hotel's overall footprint in order to assist with the comparability of different hotels' overall footprints. Outsourced laundry is treated in HCMI v3.0 as part of purchased goods and services (Category 1) to be compatible with the GHG Protocol.
2. ***Food & Beverage:*** For hotels with foodservice, food and beverage procurement is a

large share of expense and environmental impact. Hotels have significant control over their food and beverage sourcing and can adjust to reduce emissions (e.g., by reducing red meat in meals).

3. ***Housekeeping:*** Housekeeping and cleaning supplies include many chemicals and plastic products with high value chain emissions and environmental impacts throughout their lifespan. Housekeeping is an activity all hotels engage in, so this expense category is comparable across hotels.
4. ***Landscaping:*** Outsourced landscaping vehicles and machinery often consume fossil fuels, which release direct emissions. Including outsourced landscaping emissions creates a more level playing field between hotels with in-house landscaping counted in Scope 1 emissions and those without. In-house landscaping purchases can also be carbon-intensive (e.g., fertilizer).
5. ***Repair & Maintenance:*** Maintenance can require purchases of larger items (e.g., furniture, carpeting) with higher value-chain environmental impacts. Like landscaping, this category evens emissions calculations between hotels with in-house and outsourced maintenance teams and covers a potentially significant expense category.

Hotels have numerous other expenses; however, the share of expenses from other categories can differ significantly between hotels, and in many cases, are not financially or environmentally material. Additional purchased goods and services categories may be added to future HCMI updates.

Scope 3 Category 3 (Fuel- and energy-related activities): The emissions from the extraction, production, and transportation of all fuels and energy that the hotel purchased for use within its premises should be included in the overall footprint.

Scope 3 Category 5 (Waste): Emissions from the disposal of all waste generated by the hotel should be included in the overall footprint.

Other emissions: Other '***Scope 3*** emissions' (referred to in the GHG Protocol and not noted above) coming from activities such as travel (guests' travel to and from the hotel and employees' business travel), product use, and embodied carbon in hotel buildings, are excluded from the calculations.

Organisations wishing to calculate such emissions should refer to guidance from the GHG Protocol or the Climate Registry. However, in order to maintain consistency of reporting, these emissions should not be included in the HCMI calculations but may be reported in separate formats. The Working Group recognises that non-GHG sustainability metrics such as water and biodiversity are important aspects of a hotel's overall environmental impact, however, as these require complex calculations and estimation techniques, they have not been incorporated into HCMI. Additional measurement resources are available via WSHA's resources listed above.

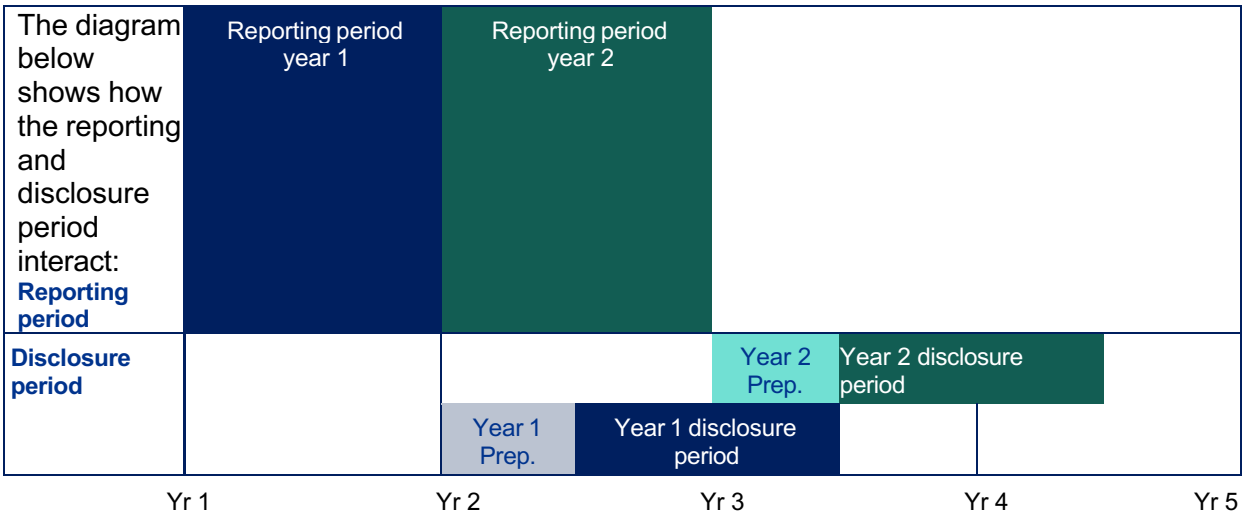
4.0 Reporting Period

4.1 Annual Calculation Cycle

The calculations are required to be performed once a year. The methodology includes an element of standing data, which is unlikely to change year on year, and information that should be updated annually (e.g., energy consumption and number of ORNs). Total GHG emissions should be calculated using a 12-month data set, but the 12-month data period can be defined by each hotel or company internally, e.g., calendar year or financial year.

4.2 Reporting and Disclosure Periods

- Data is collected and reported for a 12-month period (the reporting period). From the end of the reporting period, hotels have a maximum of six months to gather data and carry out the footprint calculations. After the calculations have been completed, the carbon footprint data is valid for 12 months (the disclosure period). Therefore, the footprint data is up to date to within 18 months during normal operations.
- Renewable energy purchases must be attributed to the same 12-month period, without forward or retroactive allocation. To support auditability, hotels should document the applicable purchase period/vintage as evidence for consistency with this rule.



4.3 Interruptions to Operations

The methodology calculates GHG emissions during “normal operations”. Initial operations for new builds in the first months prior to stabilized occupancy, or interruptions to operations due to refurbishments or other factors (pandemic, geopolitical unrest, etc.) during the reporting period, may distort results, which aim to show a normal operating position.

If abnormal circumstances alter the energy consumption by +/- 20% compared to a standard reporting period, then hotels must use the most recent period of data that reflects close to normal operations (and disclose this fact alongside impacted HCMI metrics when communicating externally). Although the data will be outside of the standard period in Section 4.2, it is more likely to be an accurate reflection of the hotel’s energy consumption during normal operations.

4.4 Seasonality

We recognise that hotels' energy consumption varies by season. However, to be consistent with the GHG Protocol, variations in energy consumption and, therefore, GHG emissions during the year are not taken into account. Hotels are asked to provide only one GHG emissions figure per year, and thus emissions are averaged out over the 12-month period.[6]

4.5 Partial-year Operations

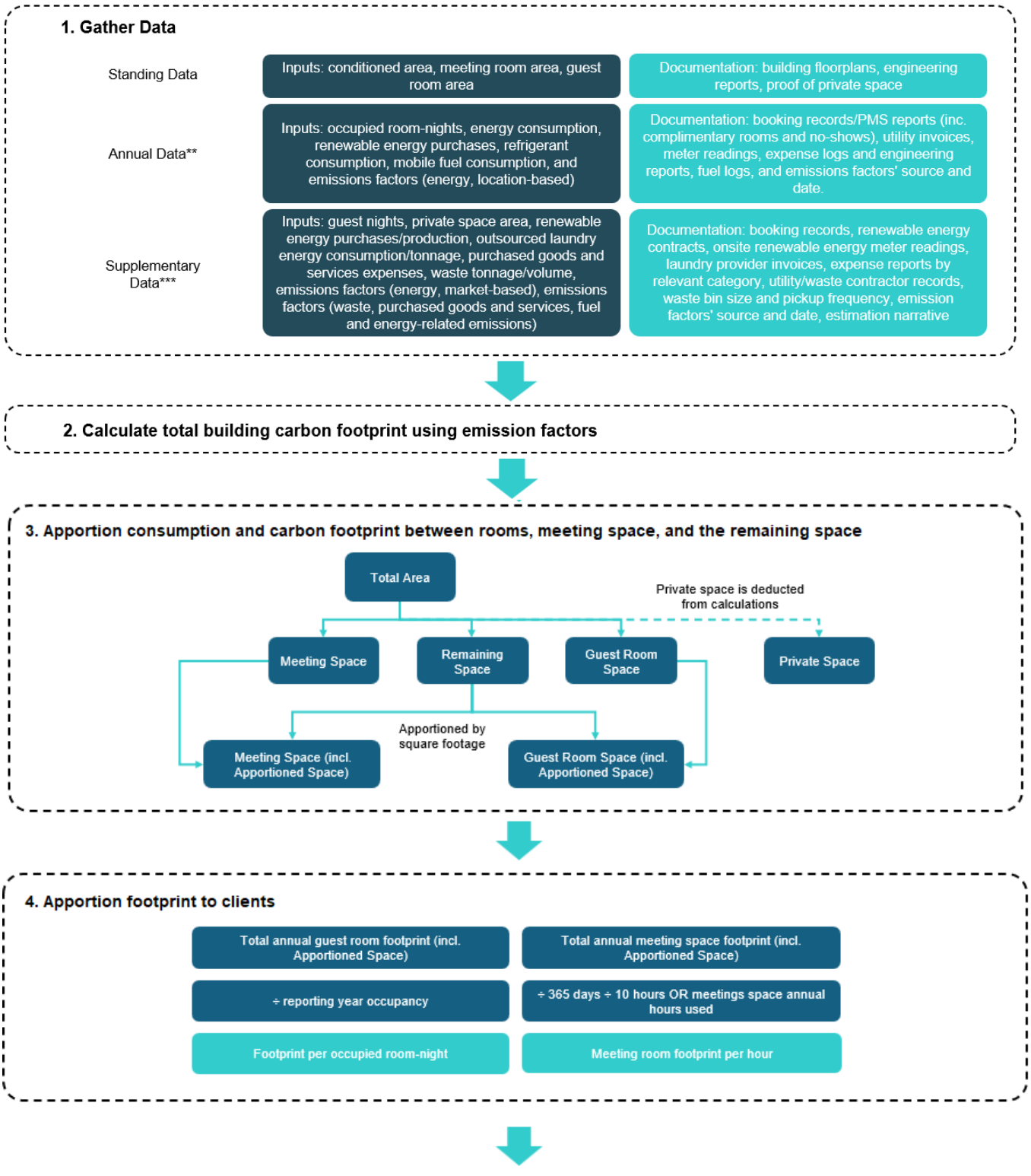
Hotels that have not been operational for a full 12-month period should extrapolate emissions sources and occupied room-nights to a full 12-month period to maintain comparability.

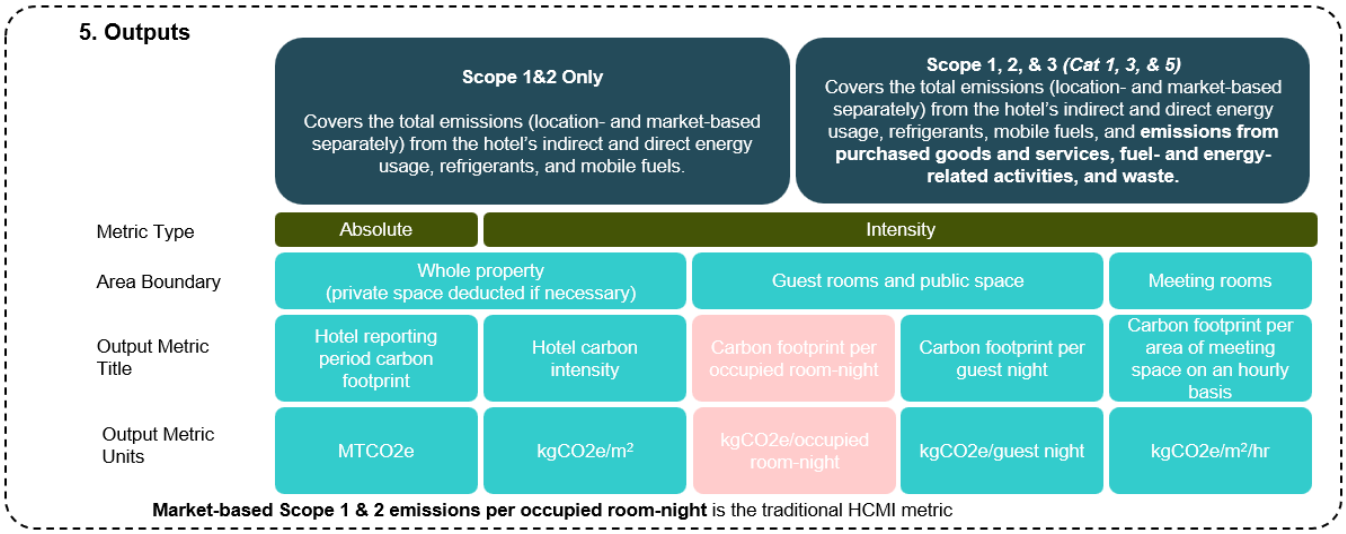
[6] Hotels may collect data quarterly to report WSHA's Universal KPIs, but it is best practice to calculate a single annual GHG inventory.

5.0 Data Requirements

5.1 Summary of Data Flow

The main pieces of data necessary for a hotel to calculate the carbon footprint for guest rooms and meeting spaces are as follows:





*This visual is explanatory only; the draft methodology remains the normative reference Results are self-reported and unassured until WSHA's assurance system is published and effective.

** Annual and supplementary data must align with the reporting period.

*** Supplementary data not required.

5.2 Standing Data

This data is unlikely to change from one year to the next and should be readily available to hotel managers.

Data requirements	Rationale	Likely source
Reporting period (start and end date)	Necessary to provide the disclosure period 12-month period should be used	Determined by the hotel's management team
Total area of guest room space (sqm)[7]	Necessary for footprint apportionment	Architectural plan, property/facility management
Total area of meeting facility space (sqm)	Necessary for footprint apportionment	Architectural plan, property/facility management

If the hotel has any ***private space***:

Private space (sqm)	Necessary for footprint apportionment	Architectural plans, property/facility management
Total area of conditioned space (sqm)	Necessary for footprint apportionment	Architectural plan, property/facility management

Please note that conditioned space is only used to calculate the percentage of GHG emissions from private space. It is only necessary to measure it if the hotel has private space with energy that is not sub-metered.

Conditioned space is often calculated in slightly different ways by different hotels (e.g., including or excluding walls). Given its limited impact on the overall calculations and in the interest of simplicity, hotels should continue using their current measurement methods. The measurement method should be documented and applied consistently on a year-to-year basis. Hotels should include a disclosure if the measurement method is changed.

Guest room space includes all areas available for occupancy by hotel guests. The area of guest room and meeting spaces is required to allocate GHG emissions between them. This is explained in more detail in the 'Calculating Emissions' section.

5.3 Data for the Reporting Period

Hotels will need to gather the following data for the reporting period each year:

[7] Note that data can be entered in sqft, but all metrics will convert to sqm as the denominator to enable standardised international comparisons.

Data requirements	Rationale	Likely source	Documentation to retain for assurance readiness	Further guidance
Total number of occupied room-night (ORNs) for the reporting period	Necessary for footprint apportionment (and for outsourced laundry estimations, if needed)	Sales data or management accounts data	Sales data or management accounts data. Record of any adjustments made due to unique lodging setups or differences between actual occupied rooms and records (e.g., no-shows).	No-shows are not included in the ORN count, but complimentary rooms that were occupied but not paid for are included. Out-of-order rooms not within the hotel's inventory do not affect the rooms calculation. Because the methodology uses ORNs instead of available rooms, all GHG emissions apportioned to guest rooms are allocated to hotel guests, leaving no emissions unassigned. Emissions are calculated on a per ORN basis. If relevant to your business (e.g., some resorts or camps), you may also calculate a supplementary footprint per bed sold, using the same methodology, provided it is clearly labeled as a supplementary, property-specific denominator and not presented as a core HCMI metric.
Total guest nights for the reporting period	Required only where the hotel elects to report the supplementary guest-night denominator	Sales data or management accounts data	Sales data or management accounts data.	No-shows are not included in guest nights.
Total energy consumption for the reporting period from all fuels and electricity, etc.	Necessary for total footprint calculation	Energy bills and/or meter readings (See the following sections for additional guidance: 5.3.1 Estimating data, 6.2.3 Mobile fuels)	Raw invoices, energy bills, and/or meter reading data. Estimation sources and calculation files, if used.	It should include all Scope 1 and 2 fuels, including but not limited to: • Fuels consumed on-site, such as natural gas (stationary combustion), oil, and other fuels. • Purchased electricity. • Mobile fuels burned (from vehicles and landscaping equipment). • District heating, district cooling, or energy purchased from a Combined Heat & Power (CHP) plant not operated by the hotel. It is good practice to take your own meter readings to measure your energy consumption and verify the accuracy of your energy bills. Meter readings should be scheduled to coincide with carbon monitoring and reporting periods. Meter readings should be taken at regular intervals, and a process should be in place to record the readings. Smart meters that record consumption on a half-hourly basis are effective tools to measure and manage your energy consumption. Energy bills can provide good audit trails, but should be reviewed as they can be inaccurate or based on estimated readings. Energy consumption should reflect energy consumed, which may differ from energy generated if the hotel sells or provides a portion of the energy generated to another party or sells back to the grid; in such cases, the sold energy should not be included. Scope 3 emissions from fuel and energy-related activities will be calculated from the energy data provided.
Emission factors	Necessary for total footprint calculation	Emission factors are obtained from national or international Datasets (e.g., International Energy Agency (IEA), Association of Issuing Bodies (AIB)	Version, date, and source of the emissions factors.	These should be country or state-specific to allow for greater accuracy. Each type of energy consumption (e.g., gas, oil, and electricity should have its own emission factor). Hotels may use either the location-based accounting approach or the market-based accounting approach, but should use the market-based emissions approach if they are purchasing renewable electricity, so that the purchases can be counted. Note that

Data requirements	Rationale	Likely source	Documentation to retain for assurance readiness	Further guidance
		Emission factors (EFs) should correspond to the latest available publication, or one with factors applicable to the same 12-month period of the data set. The version, date, and source of the emissions factors should be documented See section 6.5 for further guidance		the HCMI Calculation Tool uses market-based emissions and the AIB emission factors for residual mix for European Union (EU) countries by default. Where hotels are required to report emissions by local legislation and regulation, they should align the choice of emission factors for HCMI with that reporting. EFs should include emissions of carbon dioxide, methane, and nitrous oxide from all the agreed sources (i.e., hotels should use CO2-equivalent EFs that incorporate the Global Warming Potentials (GWP) of CH4 and N2O, instead of CO2 EF). Most EFs are published with a delay and will likely not match the chosen reporting period. If the period does not match, the latest available EFs or closest matching year should be chosen (i.e., EFs released in 2026 with 2024 calendar year data should be chosen for the 2025 calendar year).
Renewable electricity	Necessary for total footprint calculation and renewable energy metrics	Energy Attribute Certificates (EACs)/Renewable Energy Certificates (RECs) Power Purchase Agreements (PPAs) Energy bills Electricity generator meter readings	EAC/PPA contracts or proof of EAC retirement. Raw energy bills, meter reading data, or system specifications for onsite renewable energy.	For electricity purchased from a supplier generating electricity from renewable sources, the amount of renewable electricity supplied should be verifiable through mechanisms such as PPAs and EACs. Certificates of origin are recommended as the most robust source of data. In case certificates are not available to indicate the specific amount of kWh of renewables or the percentage of the property's load, users can use utility-provided emission factors, but should not claim additional renewable energy. Renewable electricity can also be generated on-site by the hotel using solar panels, wind turbines, or any other renewable electricity generation system. All EACs applied to HCMI must have been retired within the period starting six months before the reporting period and ending three months after the end of the reporting period. EACs may not be double-counted in multiple years.
Other renewable energy	Necessary for total footprint calculation and renewable energy metrics	Energy bills, or energy generator meter readings	Renewable energy contracts, raw energy bills, meter reading data, or system specifications for onsite renewable energy.	This includes energy and heat purchased from a supplier using renewable sources (e.g., geothermal district heating), or generated on-site using renewable sources (such as biomass, biofuel, hydropower, geothermal energy, or solar energy).
Outsourced laundry	Necessary for total footprint calculation to enable comparability between hotels	Laundry contractor or estimations (see section 6.4.4 for guidance)	Laundry contractor invoices. Estimation methodology used and any supporting data (e.g., laundry tonnage, spend data, occupancy data).	In order of preference, the data for inclusion are: **1.** Energy consumption provided by your laundry contractor and added to your total energy consumption. **2.** Tonnage of laundry for the year used to estimate the energy consumption. **3.** Number of ORNs for the year used to estimate the energy consumption. **4.** Laundry expenses
Refrigerants	Necessary for total footprint calculation	Purchase data or estimations (see section 6.2.2 for guidance)	Refrigerant invoices. Estimation methodology used and any supporting data (e.g., inventory of HVAC equipment)	The amount of refrigerants used is quantified by measuring the amount of refrigerant gas replaced in each cooling unit. This information should be available from your maintenance team or contractors hired to service your equipment. The data may be obtained from service logs and purchase/usage records.

Data requirements	Rationale	Likely source	Documentation to retain for assurance readiness	Further guidance
Purchased goods and services	Necessary for the calculation of Scope 3, Category 1 Emissions	Purchase data or estimations Supplier data	Calculation adjustments and how data is collected. Invoices, receipts, and accounting data (spend-based). Life-cycle assessments/supplier data (product-based). Estimation methodology used and any supporting data.	Obtain expense data for each of the relevant expense fields (laundry, food and beverage, housekeeping, landscaping, repairs and maintenance). Your Accounting team may be able to produce this data. To support auditability, ensure documentation of the expense basis (e.g., tax/service charges inclusion, currency/exchange rate approach, and account mapping) and consistent year-over-year application. Ensure any year-over-year changes are disclosed. Supplier data is preferred where available; if available for only certain goods and services, it can be combined with spend-based data or estimations.
Waste	Necessary for the calculation of Scope 3, Category 5 Emissions	Waste contractor or estimations (see section 6.4.3 for guidance)	Waste contractor invoices or other records. Estimation methodology used and any supporting data (e.g., bin size and pickup frequency data, hotel square meter data).	This includes tonnage data of waste sent to landfills, recycled, incinerated, or composted. Your trash provider or maintenance team may be able to produce this data.

5.3.1 Estimating Data

Estimating data: If hotels do not have data for the entire year, they may estimate their consumption based on the following estimation techniques:[8]

- Pro rata:
  - Calculating the daily energy consumption using the available data, and;
  - Multiplying the daily energy consumption by the number of missing days.
- Direct comparison: Using consumption data for a similar period in the previous year. The advantage of this is that it accommodates variability in energy demand (e.g., gas consumption in winter and summer months).
- Price settlement: Calculating energy consumption by dividing your energy costs by your energy rate.
- Energy Usage Intensity: There are various resources available that provide average energy usage intensity (EUI) by property type or geographic region (e.g., ENERGY STAR® Data Explorer in the United States). If gross floor area (GFA) for a hotel is known, the EUI can be multiplied by GFA to estimate annual energy consumption. Additional calculations may be necessary to split between different fuel types on site.

Users shall calculate and disclose the share of estimated data in their reported emissions. The share of estimated data should be calculated using the data proportions prior to its conversion into emissions. One metric for each source should be used to ensure correct calculations (e.g., kWh for energy and dollars for purchased goods and services).

Site energy is used when quantifying purchased electricity energy (not source energy). Transmission and distribution (T&D) losses will be included in the reporting entity's GHG inventory under Scope 3 Category 3.

5.3.2 Renewable Energy

HCMI is designed to take the use of renewable energy into account when calculating the overall carbon footprint of a hotel. Additionally, hotels and businesses are increasingly switching their energy supply towards more renewable sources and may want to communicate their efforts in that direction to their customers and stakeholders. In addition to the default grid mix from a utility provider, hotels can incorporate energy and electricity from renewable sources in several ways:

[8] UK Government: https://www.gov.uk/government/collections/energy-and-emissions-projections

Type of renewable energy use	How it is factored in HCMI
Green Power Procurement: Through the electricity and energy purchased from a local utility green power programs or via a PPA.	A cleaner energy mix results in a lower emission factor, thereby leading to a lower hotel carbon footprint. Note that the renewable mix communicated by the utility will not count towards renewable energy consumption unless renewable energy is additionally purchased by the hotel.
EACs and RECs: Through an active approach of the hotel's owner or operator, procuring a set amount of renewable energy through a market mechanism of an Energy Attribute Certificate (EAC), with appropriate attestations or certificates of origin.	Hotels that purchase renewable electricity separate from the utility via certificate may count the amount of kWh represented by the purchase with an emission factor of zero for market-based Scope 2 emissions.
On-site Production: By producing renewable energy or electricity on the hotel premises (e.g., wind turbine and solar panels).	HCMI considers that energy produced on-site will be used by the hotel and therefore reduces the need for external energy/electricity supply, thus reducing the overall consumption and carbon footprint. HCMI treats kWh generated from on-site renewable sources as having an emission factor of zero for market-based Scope 2 **if EACs are retained.** On-site production where the site does not retain the renewable attributes will be treated equivalently to grid energy purchases.

Any renewable energy generated on-site and sold back to the grid or another party should not be counted in the renewable energy metrics. On-site electricity consumed by the hotel should only be treated as renewable for market-based Scope 2 emissions where the hotel retains the associated renewable attributes (e.g., EACs/RECs); if the attributes are sold or transferred, it should not be treated as renewable. Hotels should also not count the renewable portion of standard utility-delivered electricity unless the renewable attributes are transferred to the hotel under the utility contract.

6.0 Calculating Emissions

6.1 Emissions Scope

When calculating emissions, please be careful of common errors:

- **Choice of emission factors:** Make sure to multiply your energy consumption data from one energy source (e.g., natural gas) with the EF for the same energy source and for your country or region. Electricity EFs vary greatly by region depending on the energy mix used to generate electricity (e.g., coal, nuclear, renewables, etc.).
- **Unit conversion factors:** Energy consumption is reported in your invoices or is measured through your meters using various units (e.g., kWh, GJ, m3, ft3, litres, etc.) these vary from country to country. It is important that your energy consumption data and EFs are in the same units. Standard unit conversions are listed in Appendix 5. There are also several online tools that can help you with conversions.
- **Outlier data:** Hotels may enter data that does not reflect actual annual consumption (e.g., due to missing months or unit conversion errors). It is helpful to perform an additional review of data quality for all hotels whose energy usage per ORN is 50% higher or lower than a standard benchmark for that property's geography and class (such as the Cornell Hotel Sustainability Benchmark).

6.2 Scope 1 Hotel GHG Emissions

6.2.1 Fuel Combustion Emissions

Fuel combustion emissions: This is the total direct energy usage (gas, diesel, and oil plus any additional energy sources that are consumed on-site) less energy consumed in private space (if applicable), converted into tonnes of CO2e using the most relevant emission factor for the country/state. Private space energy can be removed from building-wide totals if sub-metered data is available. Alternatively, users can apportion their energy between private space and guest space using a square meter ratio. Any private space exclusions should be documented, with evidence of either the sub-metered consumption for private space, or the square-meter data used for apportionment.

6.2.2 Fugitive Emissions

Fugitive emissions: Certain gases (refrigerants) found within air-conditioning units, fridges, and freezers have a similar impact on the atmosphere as CO2 when released. When any of this equipment is installed, operated, serviced, or retired, there may be leaks of these refrigerant gases, which are known as fugitive emissions.

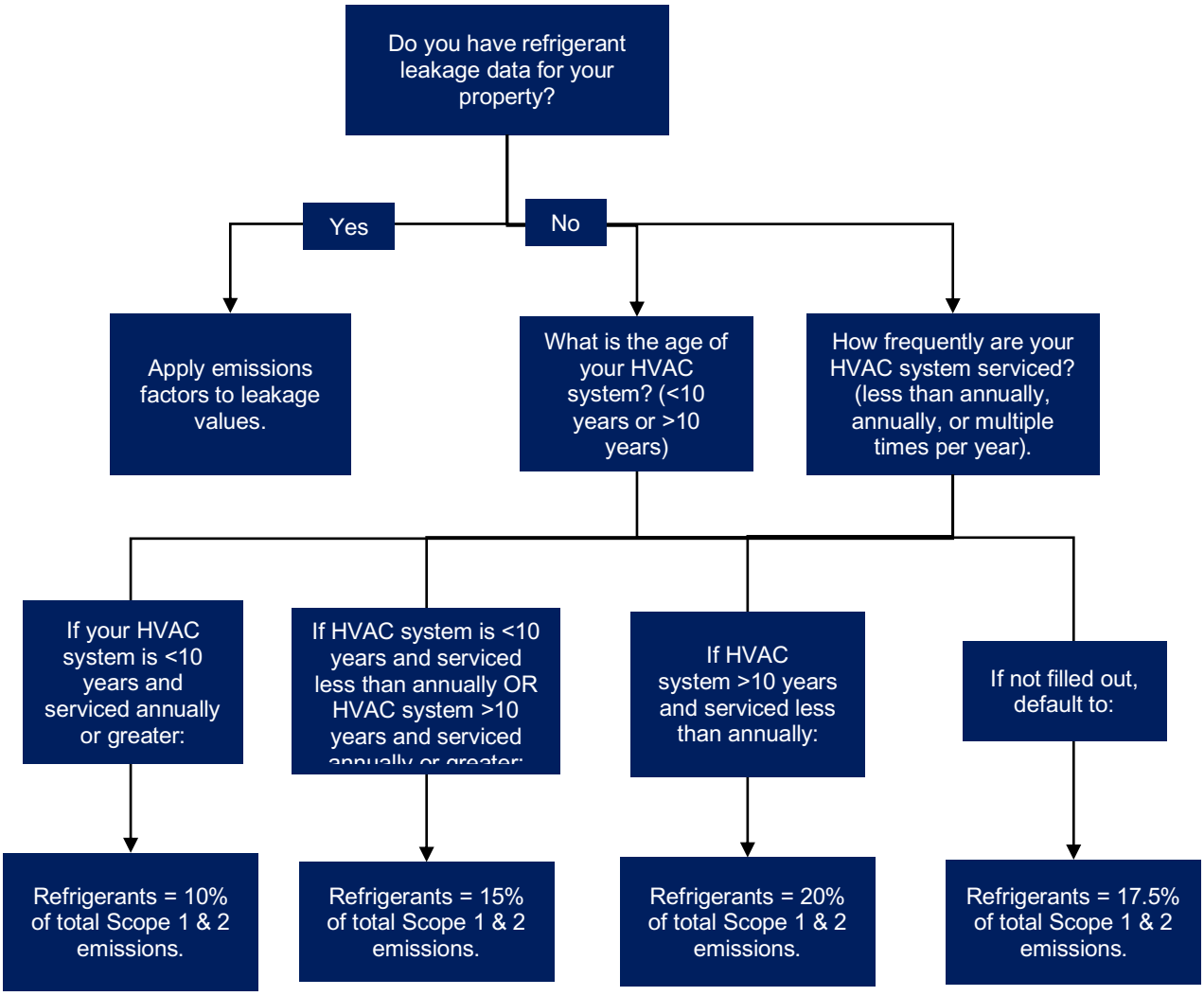
The amount of refrigerant leaked is usually small. However, their impact can be significant as they are much more damaging to the atmosphere than CO2. The GWP of different refrigerants varies greatly. Some commonly used refrigerants (R-22, R-134A, R404, and R410-A) are particularly harmful. For example, the R-22 gas traps 1,760 times more heat in the atmosphere than CO2.

For some hotels with significant air-conditioning or refrigeration systems, refrigerant replacement may be a significant source of emissions, due to leaks or a major maintenance programme during the reporting period.

Additionally, according to the GHG Protocol GHG Emissions Calculation Tool's Emission Factors tab footnote, "It is customary to exclude chlorofluorocarbons (CFCs), hydrochlorofluorocarbons (HCFCs), and halons from GHG inventories because they are regulated and are being phased out under the Montreal Protocol. These ozone-depleting substances may be documented as memo items reported as total release of gases, but no GWP is applied, and they do not contribute to the CO2e emissions

inventory." Hotels should follow the GHG Protocol's recommendations for reporting these ozone-depleting refrigerants by excluding them from HCMI emissions totals; they may be calculated and disclosed separately in alignment with applicable reporting requirements.

All hotels, unless confirmed not to use HVAC systems or HVAC systems with reportable refrigerants, must plan to calculate or estimate fugitive emissions. If tracked refrigerant data is not available, Users may estimate fugitive emissions using the decision tree below. These fallback values are interim screening assumptions intended to avoid unsupported under-reporting and to encourage the collection of actual refrigerant leakage data. They should not be interpreted as sector-average truth:[9]



How to measure fugitive emissions: The amount of refrigerants used is quantified by measuring the amount of refrigerant gas being replaced in each cooling unit. This information should be available from a hotel's maintenance team or from contractors hired to service a hotel's equipment. The data may be obtained from service logs and purchase or usage records.

Once you have determined the total amount of each refrigerant used during the reporting period, you can calculate your fugitive emissions by using the conversion table in Appendix 3. Fugitive emissions are calculated in tonnes of CO2 equivalent (tCO2e).

Hotels may also use the Screening Method or Material Balance Method of calculating fugitive emissions described in the GHG Protocol's Scope 1&2 GHG Inventory Guidance, page 19. The Screening Method is the simpler of the two methods; however, it requires hotels to carry out an

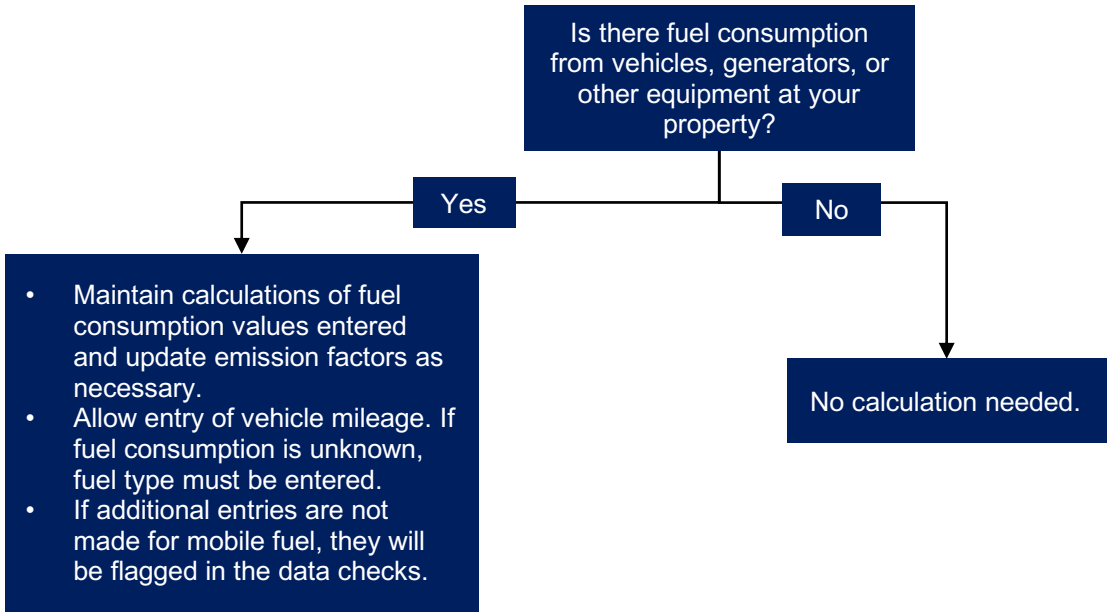
[9] Percentages in this calculation are derived from a National Renewable Energy Laboratory Study showing that fugitive emissions from refrigerant leakage account for on average 15% of total building emissions.

inventory of equipment, including the type of refrigerants used, the equipment charge capacity, and the approximate amount of time the equipment is used during the reporting period.

6.2.3 Mobile Fuels

Mobile fuels: Mobile fuels, such as diesel or gas oil, are used by hotels for hotel shuttles, company cars, landscaping equipment, jet skis, etc. If present, mobile fuel consumption for the 12-month period, aligned with energy data, should be entered.

Mobile fuel emissions should be calculated based on the decision tree below:



How to measure mobile fuel emissions: A hotel should measure the fuel consumption of all vehicles and other equipment (such as landscaping equipment) that it owns or has operational control over. For example, the fuel consumption of owned or leased company cars, shuttles, jet skis, and lawn mowers should be included. However, vehicles operated by third parties, such as limousines, delivery trucks, taxis, etc., should be excluded. Each different fuel should be entered separately on the energy consumption tab.

The appropriate emission factor for each fuel should be applied to calculate the total amount of GHG emissions from mobile fuels. Please refer to Appendix 2 for guidance on emission factors. Mobile fuels will not be estimated if neither fuel consumption nor mileage is available due to the high variability in mobile fuel usage between hotel properties.

6.3 Scope 2 Hotel GHG Emissions

This is the total indirect energy usage (electricity, steam, and any additional energy sources from off-site sources) less energy consumed in private space (if applicable), converted into tonnes of CO2e using the most relevant emission factor for the country/state. Any private space exclusions should be documented, with evidence of either the sub-metered consumption for private space or the square meter data used for apportionment.

6.4 Scope 3 Hotel GHG Emissions

Version 3.0 of the HCMI Standard was designed to provide a greater coverage of the applicable Scope 3 Categories.

These are the indirect emissions from the hotel's value chain. This includes the emissions associated with the hotel's purchased goods and services (including outsourced laundry services); the emissions associated with the extraction, processing, and transport of fuel and energy used by the hotel; and the emissions associated with the third-party disposal and treatment of waste generated by the hotel. This methodology does not include calculations for other Scope 3 categories. For all Scope 3 categories, expenses associated with private spaces only (e.g. laundry for onsite staff housing) should be excluded where possible to align with the treatment of energy, with appropriate documentation retained to support this allocation.

6.4.1 Purchased Goods and Services

This includes emissions associated with selected purchased goods and services, prioritising the key expense fields listed below for consistency and feasibility. In order to streamline data collection and calculation, Version 3.0 of the HCMI Standard prioritizes five material expense fields for the calculation of these emissions, shown below. Other purchased goods and services are outside the scope of Scope 3 calculations unless otherwise specified:

- Laundry
- Food & Beverage
- Housekeeping
- Landscaping
- Repairs and Maintenance[10]

Note that expenses for utilities and mobile transportation are already included in other emissions categories in the methodology.[11]

Hotels should select all relevant fields for inclusion in their inventory. Hotels can calculate emissions from purchased goods and services using a variety of methods, including supplier-specific, product/lifecycle assessment (LCA)-based, hybrid, and spend-based approaches. Supplier-specific or product/LCA-based emission factors should be prioritised where they are available and of sufficient quality, as they are generally more representative than lower-order secondary data.

Spend-based emission factors may be used as a practical lower-order method where higher-quality supplier-specific or product/LCA-based data are not available. For users who are new to purchased goods and services accounting, and to support a degree of consistency in spend-based calculations, HCMI recommends a default spend-based dataset in Section 6.5. This recommendation does not preclude the use of other fit-for-purpose sources where they are more appropriate.

[10] Consistent with the GHG Protocol Scope 3 Category 1 guidance, this category reflects *operational* expenses related to repairs and maintenance, and not capital goods or embodied carbon in hotel buildings (Scope 3, category 2). Reporting requirements around those categories may be part of future versions of HCMI.

[11] Users can choose to add additional PG&S categories to their HCMI calculations if relevant.

Purchased Goods and Services Emissions Factors (in order of preference):

1. Supplier-Specific EFs or LCA EFs for the same product
2. LCA EFs for a similar product
3. Spend-based EFs
4. Estimations

If expense data is available, emissions calculations using a spend-based method adjusted as necessary for geography and currency are an acceptable and straightforward approach (landscaping as an example):

Landscaping expenses (USD) x landscaping spend-based emission factor (kgCO2e/USD) = landscaping emissions (kgCO2e).

More sophisticated hotels can use hotel-specific data (e.g., from survey results, supplier records, or regression analyses) to adapt calculations beyond a simple spend-based model. Users should maintain clear records of how data is collected, emission factors applied, any calculation adjustments (e.g., currency conversions), and the source for any estimations or assumptions applied, especially if not calculating using the spend-based emission factor source noted in Section 6.5.

Due to the significance of outsourced laundry emissions, a more detailed methodology can be found in section 6.4.4.

6.4.2 Fuel and Energy Related Emissions (FERA)

Fuel and Energy Related Emissions (FERA): This includes emissions related to the production of fuels and energy purchased and consumed by the hotel that are not included in Scope 1 or 2 emissions. The extraction, processing, and transportation of fuels and energy generate emissions that are not included in the methodology for on-site use. These emissions can be calculated using the UK Department for Energy Security and Net Zero (DESNZ) well-to-tank (WTT) emissions ratios applied to the Scope 2 emission factor for the property and a T&D emission factor based on the property location.

FERA emissions are calculated as follows:

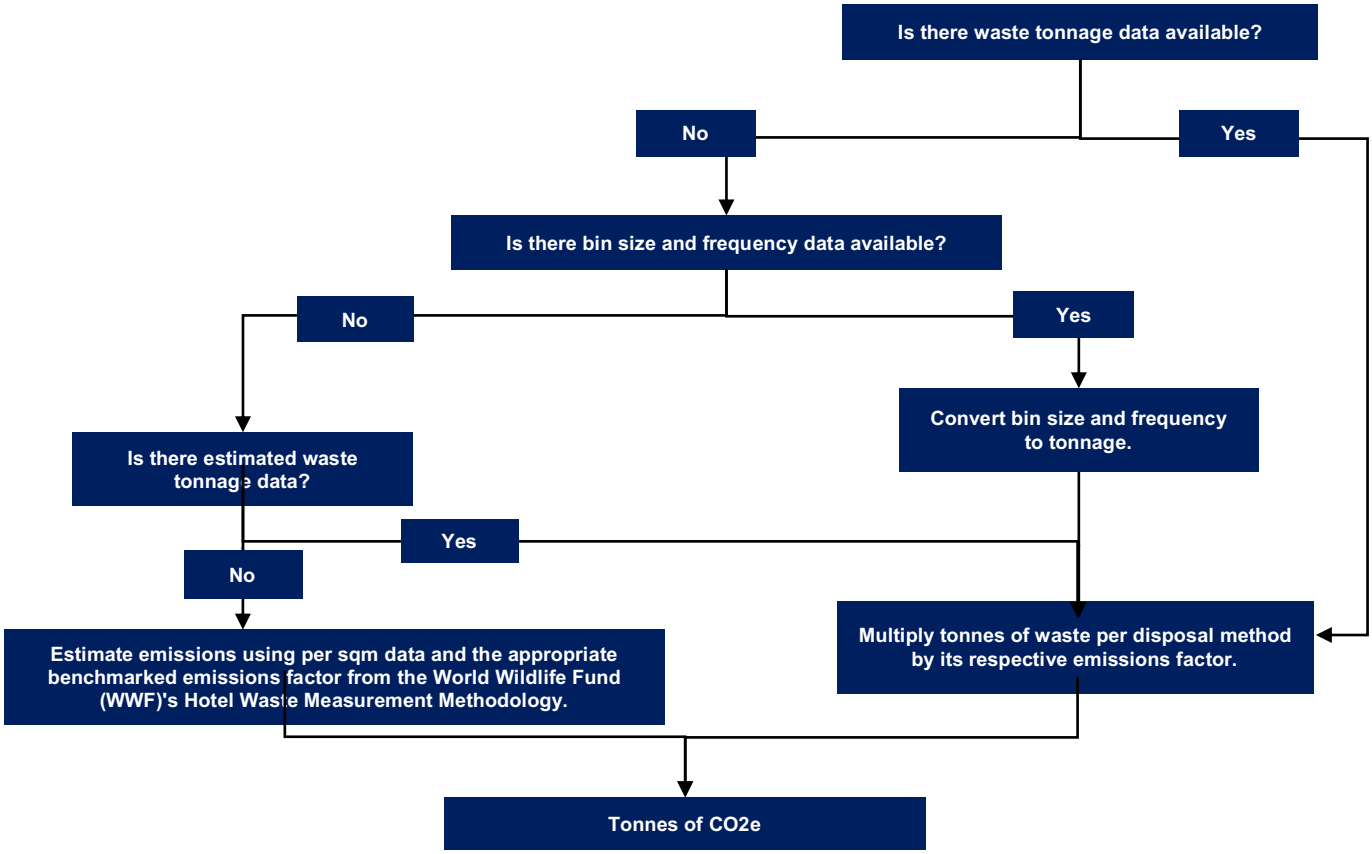
(Electricity consumption x WTT emission factor) + (electricity consumption x T&D loss factor) + (fuel consumption x applicable WTT emission factor for each fuel type)[12]

Emissions from District Heating, District Cooling, or Energy from a CHP: The emission factors for energy purchased from district heating, district cooling, or CHP plants operated by third parties depend on the efficiency and input fuel of these plants. Appendix 4 provides some guidance on how to calculate GHG emissions for these energy sources, where a hotel is able to obtain this information from its service provider. Where specific data is not available, local or national district heating and cooling emission factors should be applied. If national factors are not available, the Environmental Protection Agency (EPA) emission factors should be applied for North America and the UK Department for Energy Security and Net Zero (DESNZ) emission factors should be applied for the rest of the world.

[12] Additional fuels will apply a separate WTT emission factor and be added to electricity and natural gas.

6.4.3 Waste

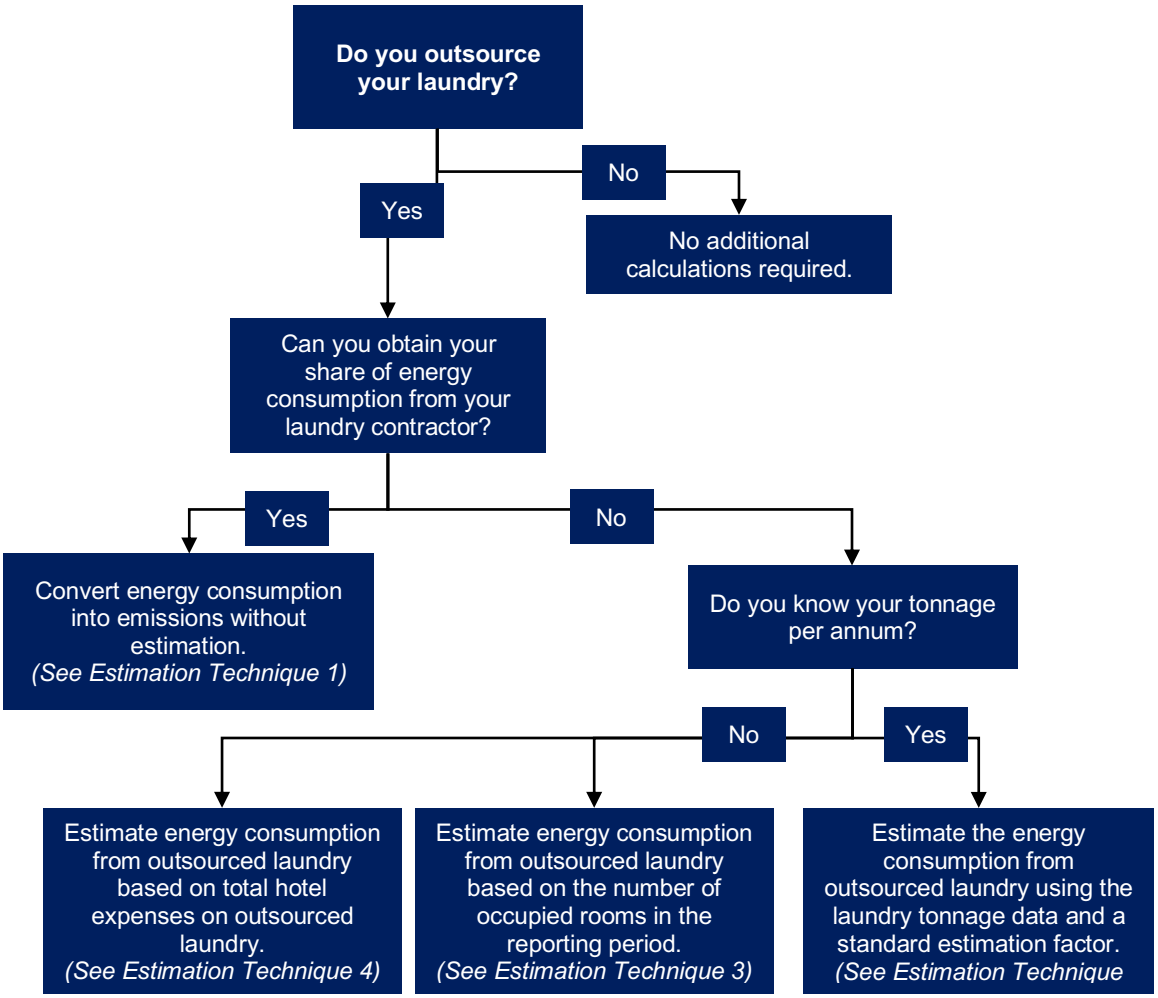
Waste: This includes emissions from the disposal of trash, recycling, compost, and other waste from the hotel's operations. Hotels should obtain data regarding the tonnage of waste and how it was handled, whether it was sent to the landfill, recycled, incinerated, or composted. Based on the handling of the waste and the location of the hotel, an applicable emissions factor (EPA, DESNZ) will be applied to the tonnage for the calculation of the emissions. Conversions to tonnage are available for hotels with only bin size and pickup frequency data, and estimated waste tonnage data can also be used. If no data is available, emissions will be estimated using benchmarked per sqm data from WWF's Hotel Waste Measurement Methodology based on the mean waste kg/sqm for the hotel's country and STR Chain Scale value (midscale, upper midscale, upscale, luxury)[13].



[13] Where the Hotel Waste Measurement Methodology does not have sufficient sample data for a country/STR combination, estimation values can be derived from similar countries.

6.4.4 Outsourced Laundry

Outsourced Laundry: The impact of in-house laundry operations is already captured in the core methodology. GHG emissions from outsourced laundry operations should be included in a hotel's footprint based on the decision tree below.



The energy consumption from outsourced laundry operations should be calculated or estimated using one of the estimation techniques below (in order of preference). Conversion from energy consumption to emissions follows the same steps as for building energy consumption, but emissions are treated as Scope 3.

Estimation Technique 1: Data from Contractor

Hotels should try to obtain energy consumption data from their laundry suppliers. The supplier should provide energy data for the same reporting period as the hotel's GHG emissions reporting period, or estimate based on a 12-month period that is similar to the reporting period.

The laundry supplier probably washes and dries laundry for several clients. Therefore, its total energy consumption should be apportioned to a specific hotel based on the percentage of volume that each hotel is responsible for. If this is not available, a percentage of revenue may be an appropriate application. The supplier does not have to supply its total revenue or volume data, as this may be commercially sensitive information. However, they should be able to provide your hotel's portion of the energy use.

As with technique 2, the limitations of estimation with technique 3 are recognised: all guest rooms may not be cleaned every day, and the amount of linen varies by hotel class. As with Technique 2, the limitations of estimation with Technique 3 are recognised: all guest rooms may not be cleaned every day, and the amount of linen varies by hotel class. In addition, the mix of electricity, gas, oil, or other sources will vary by country and by laundry contractor. If better information becomes available, it will be reviewed and considered for inclusion in the methodology.

For example, if a hotel supplier's total electricity consumption for the year is 100,000 kWh and a hotel represents 10% of their business (by volume or revenue), the hotel's share of electricity consumption is 10,000 kWh. The same calculations should be carried out for gas, oil, and any other sources of energy used by the laundry supplier.

Note: If one central laundry facility services multiple hotels within the same hotel group, the same principle applies. The laundry operator should calculate their annual energy consumption, and a percentage of that consumption should be apportioned to each hotel based on the hotel's laundry volume.

Estimation technique 2: Using Laundry Tonnage

If your laundry supplier is unable to provide your share of energy consumption, the next best alternative is to estimate the energy required to wash and dry all your laundry over a 12-month period, based on the amount of laundry.
The tonnage of laundry information may be available from your invoices. Alternatively, a reasonable estimate can be obtained by weighing the average amount of laundry used in a room and multiplying by the number of occupied rooms for the reporting period. Please note that the weight of laundry taken from a room may vary, and we recommend that a sample be taken regularly to provide an average for the reporting period. Please note the laundry must be dry when weighed. A sample of 5% of rooms each month is common practice.

Once you have your laundry tonnage information, you should calculate your energy consumption from outsourced laundry using the following estimates:

- Electricity: 180 kWh per metric tonne of laundry, plus;
- Gas: 1,560 kWh per metric tonne of laundry, plus
- Oil: 111 litres per metric tonne of laundry.

The limitations of the estimation technique are recognised as the mix of electricity, gas, oil, or other sources will vary by country and by laundry contractor. If better information becomes available, it will be reviewed and considered for inclusion in the methodology.

These estimates are based on the Carbon Trust- Guide to the Laundries Sector (CTG064) publication, which conducted a survey on the energy consumption of commercial laundries in the UK.
Please note that these figures include a 10% uplift on the Carbon Trust data to take into account the uncertainty of the estimated data and to encourage hotel managers to obtain data directly from their suppliers.
This uplift of 10% on estimated data is customary and is consistent with other carbon reporting methodologies. For example, the Intergovernmental Panel on Climate Change (IPCC) Aviation group recommends a 9 to 10% uplift on emissions from aviation to take into account non-direct routes, delays and circling, and further, the UK's Carbon Reduction Commitment applies a 10% uplift for estimated data.

Estimation Technique 3: Using Occupancy

If the two options above are not available to you, you should estimate your laundry tonnage by using an average per ORN. This is equivalent to: 5.12 kg per ORN (source: Laundry Today).
You should then follow Technique 2 to estimate the energy consumption.

In the Estimation Techniques, no further purchase of renewable energy through market mechanisms should be assumed, and the same emission factor (before any additional renewable purchases) should be used for the portion of energy from outsourced laundry.

Note: Hotels where guest rooms are not fully serviced daily (e.g., timeshares) are encouraged to use Techniques 1 or 2.

Estimation Technique 4: Using Spend Data

To align with spend-based calculations for other purchased goods & services, total hotel expenses on outsourced laundry can be entered instead of the above methods. Expenses can be converted

to emissions as outlined in section 6.4.1. It is recommended for greater accuracy that Estimation Techniques 1 or 2 are used instead of spend-based methods when data is available.

In-sourced Laundry: If a hotel in-sources laundry (washes laundry delivered from other hotels/businesses), laundry-related energy usage for third parties can be excluded from HCMI by apportioning energy consumption between the hotel and third parties by separately metered energy consumption or estimated via tonnage of laundry using the Estimation Techniques for outsourced laundry above. All adjustments to energy consumption for in-sourcing shall be thoroughly documented via invoices to third parties.

6.5 Emission factors

Emission factors convert activity data (e.g., energy consumption) to GHG emissions. Standard national or regional emission factors for stationary combustion are shown in Appendix 2. Hotels may choose the EF sources for stationary combustion, provided that they are from a reputable, third-party source such as:

- National agencies (preferred option); e.g., the EPA or the UK DESNZ.
- GHG Protocol.
- International Energy Agency; or
- The Climate Registry.

For Scope 2 emissions, and in particular purchased electricity, HCMI uses both location-based accounting and market-based accounting approaches. Standard national or regional emission factors for location-based and market-based Scope 2 emissions are shown in Appendix 2. Note that the emission factor used for location-based accounting of Scope 2 may differ from the emission factor for market-based accounting. Where a supporting HCMI calculation tool is used, it may provide default market-based and residual mix emission factors for convenience. Users should follow the GHG Protocol Scope 2 Guidance when selecting appropriate location-based, supplier-specific, residual-mix, and contractual-instrument-based emission factors. All emission factors used should be documented, and calculations should be traceable to enable external verification.

Purchased Goods and Services: Numerous LCA databases are available to obtain product-specific emission factors. The GHG Protocol maintains a list of these databases, some of which are freely accessible. HCMI does not prescribe a single source for supplier-specific, product-based, or LCA-based calculations, recognising that hotel groups may subscribe to different databases, work directly with suppliers, or use internal tools that better match their available data and reporting systems.

Where spend-based emission factors are used, HCMI recommends the US Environmentally-Extended Input-Output (USEEIO) Models, as maintained through the Comprehensive Environmental Data Archive (CEDA) by Watershed, as a practical default reference source. However, HCMI does not mandate a single spend-based database. Other transparent and methodologically appropriate spend-based sources may be used where they are more geographically relevant, better aligned to the hotel's expense coding or chart of accounts, or otherwise more fit for purpose.

USEEIO provides emissions factors in kgCO2e per USD for 1,016 commodities using the North American Industry Classification System (NAICS). As of 2025, USEEIO is maintained through CEDA by Watershed. This database provides regionally specific emission factors based on UN subregions; users should apply the factors for their region.[14] Calculations can be input as local currency using conversion factors in the CEDA database (originally sourced from openexchangerates.org on an annual basis). Where alternative sources are used, the source selected, rationale, mapping approach, and any material assumptions or adjustments should be clearly documented and retained for review.

14 CEDA provides country to region mapping for all countries, which should be consulted when identifying regional-emission factors. All countries will have a regionally specific emission factor.

Hotels may use supplier-specific factors, product/LCA-based factors, or alternative spend-based datasets instead of USEEIO/CEDA values, provided that the source, rationale, and method are clearly documented.

The following NAICS codes are used for emission factors:

1. ***Outsourced laundry***: 812320, Drycleaning and Laundry Services (except Coin-Operated).
2. ***Food & Beverage:*** If details on meal types are provided for the survey questions, specific values from the World Resources Institute Cool Food Pledge Calculator are used. Where survey information is not available, 722513, Limited-Service Restaurants is used.
3. ***Housekeeping:*** 561720, Janitorial Services.
4. ***Landscaping:*** 561730, Landscaping Services.
5. ***Repair and maintenance:*** 561790, Other Services to Buildings and Dwellings.

Hotels with emissions factors provided by suppliers or external consultants can manually input these instead of using USEEIO/CEDA values.

CO2 Equivalents: EFs should include emissions of carbon dioxide, methane, and nitrous oxide from all the agreed sources (i.e., hotels should use CO2-equivalent EFs that incorporate the ***Global Warming Potentials*** of CH4 and N2O, instead of CO2 EF). EFs are to be quantified using High Heating Values[15].

6.6 Offsets

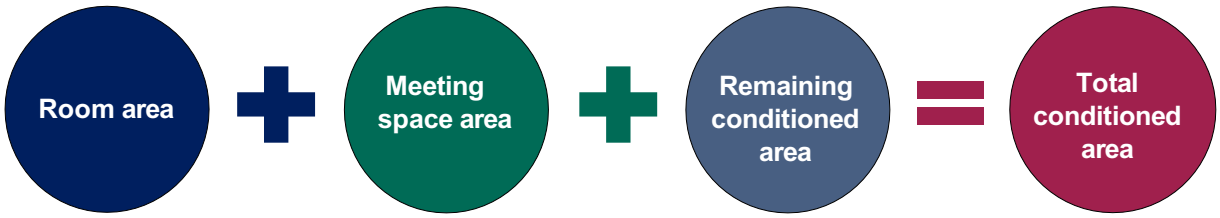
The methodology measures the GHG efficiency at which a hotel provides guest rooms and meeting space to its customers. If the hotel purchases carbon offsets, it can disclose this information, but it cannot deduct the amount of emissions that are offset from its total GHG emissions. This is consistent with GHG Protocol Corporate Standard.

6.7 Apportionment

For carbon reporting purposes, the hotel is divided into its two main services, guestrooms and meeting space, to avoid overlapping of footprints for guests that both attend meetings and stay at the hotel. ***Back of house*** areas and other services and facilities are interpreted as being part of the service offering.

GHG emissions are allocated to guest rooms and meeting spaces based on the ratio of space occupied by guest rooms and meeting spaces within the hotel.

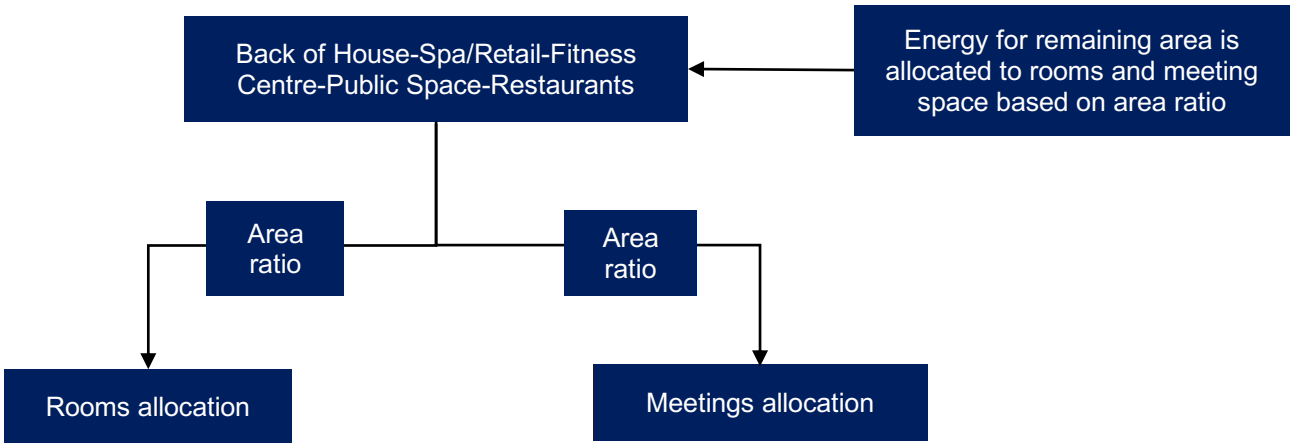
The two services are apportioned as follows:



- Total area is defined as the total conditioned space minus private space.
- Room area is defined as a percentage of the total area.

[15] Heating Value refers to the amount of energy released when a fuel is burned completely.

- Meeting space is defined as a percentage of the total area.
- Remaining Areas: corridors, back of house, spa, retail, fitness, public space, restaurants, etc., make up the remaining percentage of total area.
- The percentage of Remaining Areas is allocated proportionately to Rooms and Meeting Space.
- Remaining emissions are allocated to the categories of “Rooms” and “Meeting Space” proportionate to their area ratio.



Carbon footprints for all rooms and all meetings are calculated as follows:

- *Rooms Allocation x (Total Emissions) = Carbon footprint for all rooms*
- *Meetings Allocation x (Total Emissions) = Carbon footprint for all meetings*

Note: If a hotel has no meeting space, then all GHG emissions are allocated to guest rooms. Note also that these footprints are calculated independently for location-based and market-based emissions, thus two values, location-based and market-based, are provided for each output metric. **Market-based emissions should be used as the default value for any external reporting of HCMI intensity metrics.** Location-based emissions can be used for local reporting or internal use, as necessary.

6.8 Carbon Intensity

The methodology assumes equal intensity for all areas of the hotel. This was deemed necessary to keep the methodology simple enough that hotel managers can use it on their own, without the need for extensive sub-metering, data analysis, or external assistance.

This estimation does not affect the hotel's overall carbon footprint but may affect the apportionment between guest rooms and meeting space. For clients who book both (e.g., a combination of meeting space and hotel rooms), the methodology assumes this will not have a material impact. The methodology can be refined in the future to take into account new research in this field.

7.0 Outputs

7.1 Scope 3 Treatment and Transition

HCMI v3.0 is intended to move the industry forward while maintaining comparability. For this reason, HCMI will have a phased transition aligned with the reporting periods. Up until the 2025 reporting period, hotels will only be required to report Scope 1 & 2 HCMI values while beginning Scope 3 data collection. From the 2026 reporting period and onward, all HCMI outputs shall include Scope 1, 2, and 3 emissions.

7.2 Core Metrics

The core HCMI metrics are market-based emissions per occupied room-night (ORN) and per area of meeting space on an hourly basis. Supplementary denominators, including per guest night and per property area on an annual basis, may also be calculated and reported where clearly labeled as supplementary metrics.

Phase 1 – Reporting periods through 2025

- Market-based Scope 1 & 2 emissions per ORN
- Market-based Scope 1 & 2 emissions per meeting space area/hour

Phase 2 – Reporting periods 2026 onward

- Market-based Scope 1, 2, & 3 emissions per ORN
- Market-based Scope 1, 2, & 3 emissions per meeting space area/hour

7.3 Total Scope 1 and 2 Emissions

The hotel's total emissions from direct emissions sources and indirect energy usage, in tonnes of CO2e. Scope 2 results should be presented separately for location-based and market-based approaches and shall not be combined. Where a total is reported, provide two totals: (i) Scope 1 + Scope 2 (location-based) and (ii) Scope 1 + Scope 2 (market-based).[16]

7.4 Total Scope 1, 2, and 3 Emissions

The hotel's total emissions from direct emissions sources, indirect energy usage, and indirect sources, including emissions from purchased goods and services, fuel- and energy-related activities, and waste, in tonnes of CO2e. Scope 2 results should be presented separately for location-based and market-based approaches and shall not be summed.

7.5 Carbon Footprint Per Square Meter on an Annual Basis

The total building footprint is intended to measure the carbon intensity of the hotel on an annual basis, which serves for benchmarking and comparison over time. It is calculated before apportionment occurs. This metric is provided both for Scope 1 & 2 emissions only and for Scope 1, 2, and 3 emissions.

Carbon footprint for the entire building (excluding private space)/Building area (sqm) = Carbon footprint per square meter

[16] Absolute emissions values referenced here and all intensity metrics reflect the HCMI reporting boundary and therefore exclude private space. If a user wishes to prepare a separate whole-building inventory, private-space emissions may be reported separately, but they should not be presented as HCMI results unless they fall within the HCMI boundary.

7.6 Carbon Footprint Per Occupied Room Night

The room footprint is intended to communicate the footprint of one night's stay in a hotel room. This footprint can then be multiplied by the number of room nights occupied by a client. ORNs are the total rooms that were occupied by guests in a given period, and according to this methodology, each ORN shares the proportion of the total footprint equally.

Carbon Footprint for all rooms ÷ ORNs = Carbon Footprint per ORN

Carbon Footprint per ORN x Number of Client Room Nights = Client Room-Night Carbon Footprint

Example

A client has booked a meeting room for a three-day conference.

Two days before the conference, the hotel sets up the room.

The day before the conference, the client sets up the conference between 10:00 and 20:00.

The conference then runs for three days for eight hours each day.

On the last day, the client needs four hours to break down their set up.

The hotel then cleans the meeting room and sets it up for another event.

The number of hours used by the client is therefore:

10 + (3 x 8) + 4 = 38 hours

7.7 Carbon Footprint Per Guest Night

The room footprint is intended to communicate the footprint of one night's stay by an individual guest, instead of by room sold. This footprint can then be multiplied by the number of client guest nights. Guest nights are calculated by multiplying the total guests by the total nights stayed per guest for each booking, then summing all booking guest nights to obtain an annual value.

Carbon Footprint for all rooms ÷Total Guest Nights = Carbon Footprint per Guest Night

Carbon Footprint per Guest Night x Number of Client Guest Nights = Client Guest-Night Carbon Footprint

7.8 Carbon Footprint Per Area of Meeting Space on an Hourly Basis

Meeting Spaces' footprints are derived using the average daily consumption of Meeting Spaces' energy. The Meeting Spaces' Carbon Footprint per Day is broken down based on meeting hours and the proportion of meeting space utilized.

Meeting Spaces' Carbon Footprint ÷365 = Meeting Spaces' Carbon Footprint per Day

To arrive at the Meeting Spaces' Carbon Footprint per hour per area of meeting space (sqm), the Meeting Spaces' Carbon Footprint per day is divided by the average number of operating hours of meetings in one day and by the total area of meeting facility space. The average number of meeting hours per day is standardized at 10 hours. **If clients maintain detailed records of meeting space usage across the year, documented actual operating hours can be used instead of this assumption.**

The Meeting Spaces' Carbon Footprint per hour per sqm is then multiplied by the amount of meeting space utilized for the meeting and the duration of the meeting in hours.

(Meeting Spaces' Carbon Footprint per Day per sqm) ÷ (10) x (amount of meeting space utilized) = Client meeting footprint per hour

A client's footprint will be calculated by multiplying this figure by the number of hours that the client has used the meeting space, including the client setup and breakdown time, but excluding the hotel

setup and breakdown time.

Please note that the energy consumed during the hotel set-up and breakdown of the meeting space is still captured in the overall footprint calculations, but the allocation of the GHG emissions is based on the client's utilisation of the meeting space.

Hotels which were closed for part of the reporting period should use the number of days they were open for, instead of the standard 365 days.

Comments

We recognise that the methodology assumes that meeting rooms are being used for on average 10 hours per day, 365 days of the year. Feedback suggests that this is a realistic estimate of average usage (excluding set up time) of meeting space across the year, although it is recognised that this varies considerably from hotel to hotel. This assumption may be reviewed in the future if more information becomes available. However, in order to keep the methodology simple, we opted for a standard meeting space utilisation rate.

We recognise that room occupancy levels and utilisation of meeting space have an impact on the final outputs. However, the methodology does not attempt to measure the incremental GHG emissions from a guest room or meeting room, but the average over a 12-month period.

Please note that the methodology for guest rooms uses a spatial measure (m^2 or sq. ft) only for the total building footprint, or to allocate GHG emissions between guest rooms and meeting space. The output of the rooms and meeting footprints focuses on the client as the generator of emissions. GHG emissions are therefore reported per occupied room. As a result, the methodology for guest rooms (unlike meeting rooms) does not account for different room sizes (e.g., standard room vs. suite). This may be reviewed in the future.

In addition to carbon footprint metrics, the HCMI Standard allows hotels to aggregate and report on their use of these renewable electricity and energy sources, expressing the results in the following format:

- TOTAL renewable energy and electricity used by the hotel (kWh)
- TOTAL renewable electricity used by the hotel (% of total electricity use)
- TOTAL renewable energy and electricity used by the hotel (% of total energy consumption)

7.9 Amount of Renewable Energy Used by the Hotel

The total renewable energy use of the hotel (expressed in kWh) is calculated by adding the amounts used from the potential sources listed in Section 5.3.2:

Total renewable energy use = energy and heat purchased from a supplier using renewable sources[17] *+ energy and heat generated on-site using renewable sources*

7.10 Share of Renewable Energy Used by the Hotel (% of total energy use)

This figure accounts for energy from renewable sources, expressed in a single unit (we recommend kWh).

% Share of renewable energy used by the hotel = (Total renewable energy use ÷ total energy use) x 100

[17] This includes EACs and other renewable energy where the renewable attributes are purchased but renewable energy is not physically delivered.

7.11 Internal Review

Consistent with GHG Protocol guidance, the following activities can be implemented in order to reduce the risk of errors:

- Conducting an independent review with someone who has not been involved with the calculations to check the data.
- Checks for mistakes in converting measurement units, entering data, using formulas, etc.
- Checks for large variances in energy consumption between periods: Can these be explained, or could there be an error between invoices, meter readings, and the calculations spreadsheet?
- Comparison of results of different hotels within a group and investigation of unexplained differences in the results to enable different applications of the methodology to be identified and addressed.

7.12 External Review

An external review of a GHG inventory by a qualified third-party assurer can support internal reviews and strengthen the inventory's credibility and accuracy. External review is a key component of regulatory frameworks and voluntary standards. WSHA is developing an assurance system and external review (where applied) should follow WSHA’s published assurance requirements and maintain assurance documentation. HCMI results will otherwise be treated as self-reported and unassured.

Appendix 1: Definitions

Term	Definition
Back of house	All non-client-facing areas. This includes kitchen, offices, employee locker rooms, storage rooms, in-house laundry facilities, etc.
Carbon footprint	The total amount of greenhouse gas (GHG) emissions produced directly and indirectly; expressed in this methodology as tonnes of carbon dioxide equivalent (tCO2e).
Carbon footprint per occupied room-night (ORN)	The carbon footprint that is allocated to each ORN.
Carbon footprint per area of meeting space on an hourly basis	The carbon footprint that is allocated to one hour of use of a meeting space and based on the percentage of meeting space area used.
Conditioned space	The area of a hotel that is conditioned by any heating, ventilation, and air conditioning (HVAC) equipment.
Emission factor (EF)	The conversion figure used to convert activity data into greenhouse gas (GHG) emissions, typically expressed as CO2e.
Energy Attribute Certificates (EACs)	Contractual instrument that conveys information (attributes) about a unit of energy. Traditionally, they reflect renewable energy consumption. Another commonly used term is a Renewable Energy Certificate (REC).

Energy consumption	• This is your total energy consumption for all your premises, including any outdoor facilities or private space. You should obtain this data from your energy invoices or from taking meter readings at the beginning and end of the reporting period. Note that energy from private space will not be included in the final emissions metrics.
	• It is good practice to take your own meter readings to measure your energy consumption and verify the accuracy of your energy bills. Meter readings should be scheduled to coincide with carbon monitoring and reporting periods. Meter readings should be taken at regular intervals, and a process should be in place to record the readings. Smart meters that record consumption on a half-hourly basis are effective tools to measure and manage your energy consumption.
	• Energy bills can provide good audit trails, but should be reviewed as they can be inaccurate or based on estimated readings.
	• Estimating consumption: if you do not have data for the entire year, you may estimate your consumption based on the following estimation techniques (source UK Environment Agency):
	  ○ Pro rata estimation technique involves quantifying the missing data for a data gap using a proportional method based on actual consumption from another similar period.
	  ○ Direct comparison method uses data that corresponds with a similar period of supply. The advantage of this is that it accommodates variability in energy demand.
	  ○ Price settlement using the unit price shown on an earlier bill for this billing period or an average price per unit to convert energy costs into consumption data.

Fuel and Energy Related Activities (FERA)	Energy-related activities outside of the end consumers' control, e.g., the lifecycle of fuel from mining to combustion and transmission and distribution losses.
Fugitive emissions	Emissions that are not physically controlled but result from the intentional or unintentional releases of GHGs. A common example is emissions from refrigerants, air conditioning, and refrigeration units.

Global Warming Potential (GWP)	A factor describing the radiative forcing impact (degree of harm to the atmosphere) of one unit of a given GHG relative to one unit of CO2 (GHG protocol definition).
Guest Room Space	The area of the hotel that is available for occupancy by hotel guests.
Guest Night	One guest who rents or occupies an overnight accommodation for one night
Meeting room / space	Area of the hotel to hold on-site meetings / events.
Mobile fuels	Energy consumption from transport, machinery, and equipment.
Occupied room-nights	Sum of all rooms sold plus complimentary rooms, less no-shows for the reporting period.
Private Space	Areas which are not related to the hotel (e.g., the hotel leases a floor to a third-party) and not accessible to hotel guests or conference attendees (e.g., private apartments). On-site staff accommodation is also considered private space. Back of house areas, concessions, or public spaces are not considered private space.
Purchased goods and services (PG&S)	Items or activities procured by an organization.
Reporting period	This should be a 12-month period defined by hotel management and generally in line with other reporting requirements, as detailed in Section 4.0.

Appendix 2: Emission Factors

The latest published version of emission factors available for the reporting period should be used.

HCMI users are recommended to follow the GHG Protocol emission factor hierarchy as follows:

1. National emission factors from official national bodies (e.g., US EPA).
2. National emission factors from official international bodies (e.g., IEA, IPCC).
3. National emission factors from unofficial bodies (e.g., Green-e® in the US).
4. Proxy emission factors from similar countries with more comprehensive official emission factor publications (e.g., using Australian emission factors for New Zealand). This is recommended for Scope 1 and Scope 3 emission sources only, as electricity emissions factors can vary significantly between neighbouring countries.
5. International emission factors from non-official sources.

National emission factor sources for some major countries with public emission factor reporting are shown in the table below, though this is not intended to be comprehensive of all emission factor sources.[18]

	Purchased Electricity (location-based)	Purchased Electricity (market-based)	Other Energy Sources
Australia	National Greenhouse Accounts Factors	National Greenhouse Accounts Factors	National Greenhouse Accounts Factors
Canada	National Inventory Report 1990-2023	N/A	National Inventory Report 1990-2023
Japan	N/A	N/A	National GHG Inventory Report of JAPAN
United Kingdom	UK Government GHG Conversion Factors for Company Reporting (DESNZ)	Association of Issuing Bodies European Residual Mixes	UK Government GHG Conversion Factors for Company Reporting
United States, Puerto Rico, other US Territories	EPA eGRID	Green-e Residual Mix Emissions Rate Tables	EPA Emission Factors for GHG Inventories
New Zealand	Measuring emissions: A guide for organisations - summary of emissions factors	N/A	Measuring emissions: A guide for organisations - summary of emissions factors
Mexico	México Registro Nacional de Emisiones	N/A	Calculadora de emisiones para el Registro Nacional de Emisiones
Singapore	Energy Market Authority Singapore Energy Statistics (OMEF)	N/A	N/A
EU	European Commission, Joint Research Centre - GHG Emissions Factors for Electricity Consumption	Association of Issuing Bodies European Residual Mixes	N/A
All Other Countries/Regions and Territories	Local or international sources	Local or international sources	WRI Stationary Combustion Tool V4.1

[18] If N/A, alternative resources may be available from other government agencies in the local language or from international bodies.

Appendix 3: Global Warming Potential (GWP) of Refrigerants

Refrigerants used	Global Warming Potential (GWP) of refrigerant (kg CO2e)
HCFC-22/R22 = chlorodifluoromethane	1,760
HFC-134a/R-134A	1,300
R-404A	3,942.8
R-410A	1,923.5
HFC-23	14,600
HFC-32	677
HFC-41	116
HFC-125	3,740
HFC-134	1,120
HFC-143	328
HFC-143a/R-143a	4,800
HFC-152a	138
HFC-227ea	3,350
HFC-236fa	8,060
HFC-245fa	858
HFC-43-10mee	1,650
HFC-152	16
HFC-161	4
HFC-236cb	1,210
HFC-236ea	1,330
HFC-245ca	716
HFC-365mfc	804
R-407A	1,923.4
R-407C	1,624.21
R-407F	1,674.1
R-408A	3,257.1
R-507A	4,300
R-508B	11,698
R-403A	3,100
HCFC-123	79
HCFC-124	527
HCFC-141b	782
HCFC-142b	1,980
HCFC-225ca	127
HCFC-225cb	525
HCFC-21	148
R-290/HC-290 = propane	<1 (taken as 1)
R-600a/HC-600a = isobutane	<1 (taken as 1)
R-406A	1,780
R-409A	1,484.75
R-502	4,785.9

The GWP of refrigerants listed in this table indicate the relative amount of heat trapped by refrigerants compared to CO2. Fugitive emissions are calculated in tonnes of CO2 equivalent using these GWP factors.

For example, 1 kg of R-410A released in the atmosphere equals 1,923.5 kg of CO2-equivalent (or 1.92 tonnes).

To measure your total fugitive emissions, you need to follow these steps:

1) Determine the amount of each refrigerant used in the reporting period (in kg).
2) For each refrigerant, multiply the amount used by its GWP.
3) Sum up the figures to obtain a total in kg of CO2-equivalent; and
4) Divide by 1,000 to obtain a total amount of fugitive emissions in tonnes of CO2-equivalent. This number will be added to your total GHG emissions.

Sources:

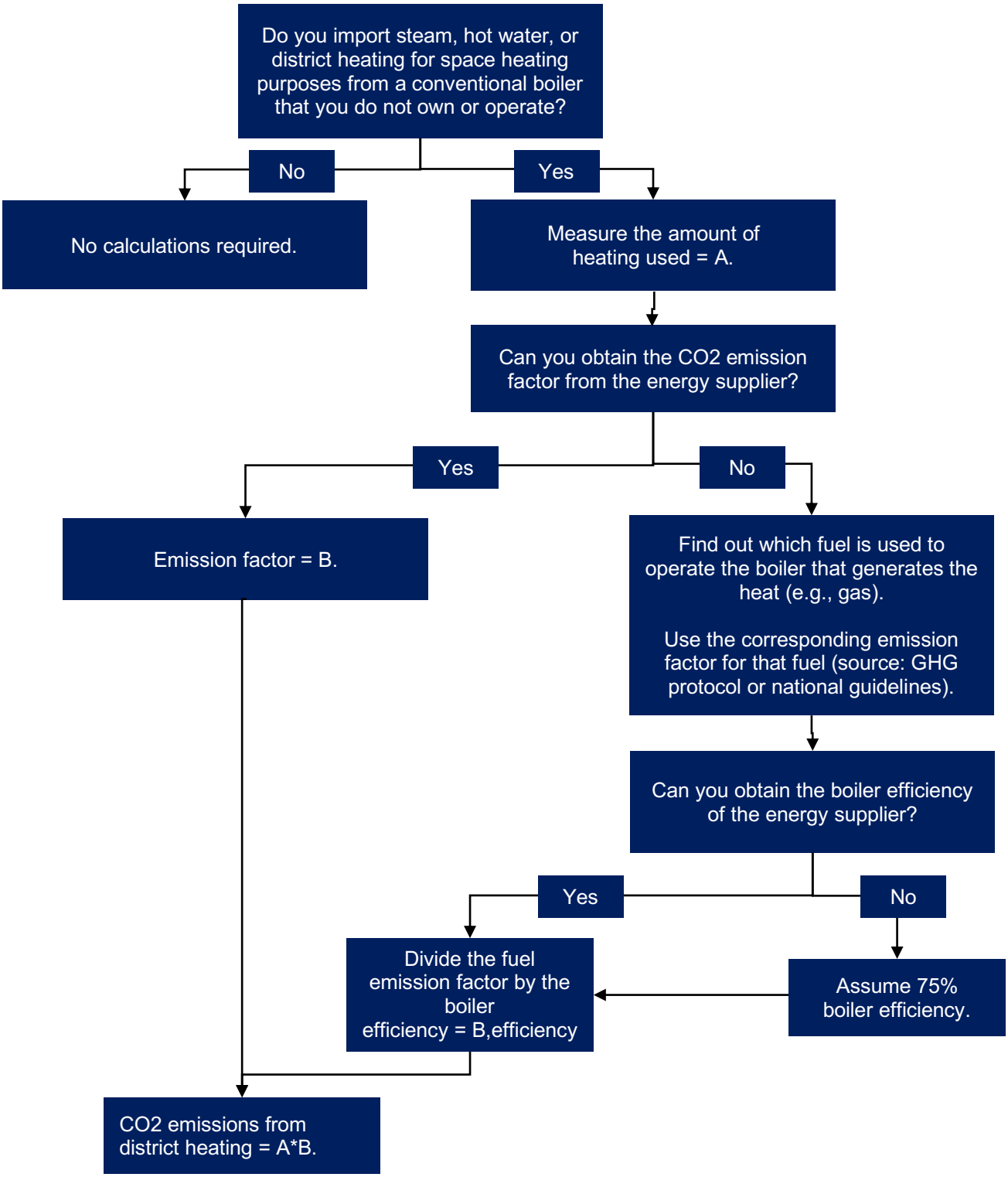
California Air Resources Board, High-GWP refrigerants.
https://ww2.arb.ca.gov/resources/documents/high-gwp-refrigerants

Greenhouse Gas Protocol: 2024, IPCC Global Warming Potential Values.
https://ghgprotocol.org/sites/default/files/2024-08/Global-Warming-Potential-Values%20%28August%202024%29.pdf
Further guidance on how to calculate refrigerant leakage is provided in the UK government 'Environmental reporting guidelines'.

Appendix 4: District Heating, Cooling, and Combined Heat & Power

Some hotels purchase electricity, steam, or heat from a Combined Heat & Power (CHP) plant that they do not own or operate. HCMI version 1.1 provides the following decision trees on how to calculate GHG emissions from these energy sources, using guidance from the Climate Registry. In HCMI version 3.0, these are maintained for reference, though in most cases national or regional emission factors for district heating and cooling can be used to simplify calculations.

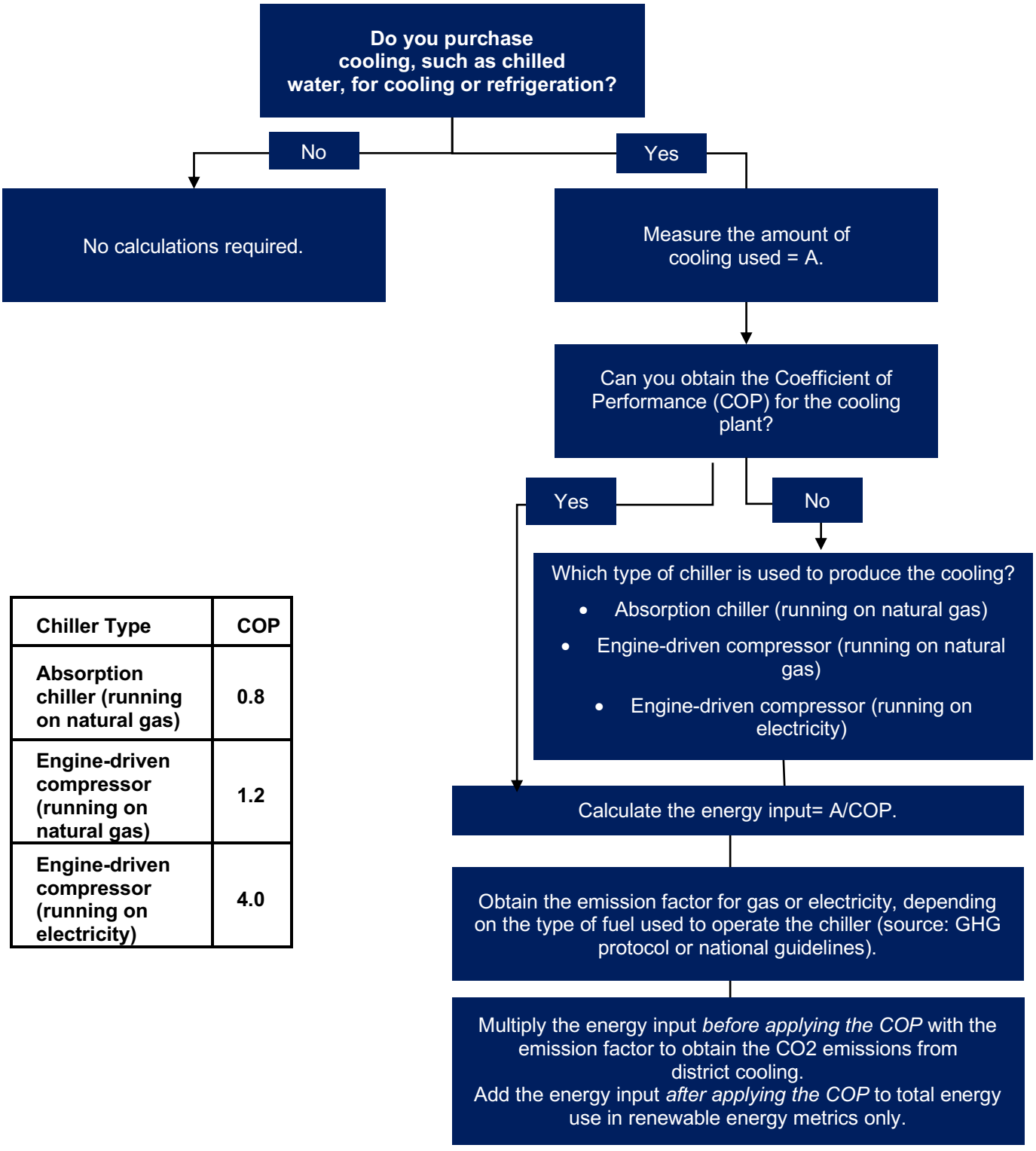
District Heating



Note: The quantity of steam or heat used (A) can be obtained from invoices or metered records.

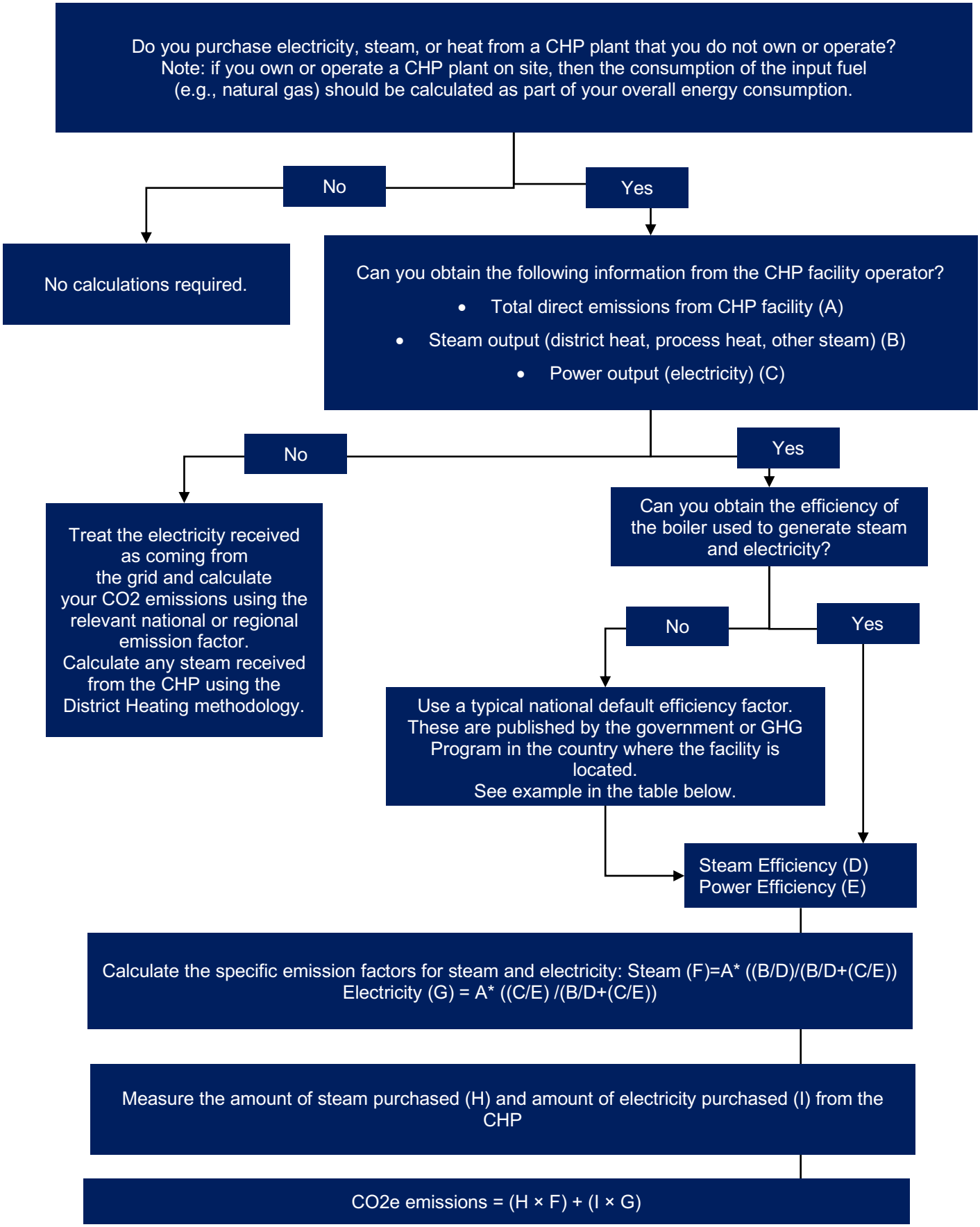
District Cooling

Note: The quantity of cooling used (A) can be obtained from invoices or metered records.



Chiller Type	COP
Absorption chiller (running on natural gas)	**0.8**
Engine-driven compressor (running on natural gas)	**1.2**
Engine-driven compressor (running on electricity)	**4.0**

Energy from Combined Heat & Power Plants



GHG Program / Country	Assumed efficiency of typical power production	Assumed efficiency of typical steam production
US Climate Leaders, EPA	0.35	0.8
UK Emissions Trading Scheme, DESNZ	0.33	0.66

Note: The quantity of heating, steam (B) or electricity (C) used can be obtained from invoices or metered records.

Appendix 5: Unit Conversions

If this annex does not have the conversion factor you are looking for, a more complete list of conversions may be provided in a supporting calculation tool (when available).

Common unit abbreviations:

- kilo (k) = 1,000
- mega (M) = 1,000,000
- giga (G) = 1,000,000,000

From/To - multiply by	GJ	kWh	therm	kBtu
Gigajoule, GJ	1	277.778	9.47867	947.817
Kilowatt hour, kWh	0.0036	1	0.034123	3.41214
Therm	0.1055	29.30558	1	100
Thousand BTUs, kBtu	0.001055	0.29306	0.01	1

Volume

From/To - multiply by	L	m3	cu ft	Imp. gallon	gallon (US)	Bbl (US, P)
Litres, L	1	0.001	0.03531	0.21997	0.26417	0.0062898
Cubic metres, m3	1000	1	35.315	219.97	264.17	6.2898
Cubic feet, cu ft	28.317	0.02832	1	6.2288	7.48052	0.17811
Imperial gallon	4.5461	0.00455	0.16054	1	1.20095	0.028594
US gallon	3.7854	0.0037854	0.13368	0.83267	1	0.023810
Barrel (US, petroleum), bbl	158.99	0.15899	5.6146	34.972	42	1

Weight/Mass

From/To - multiply by	kg	tonne	ton (UK)	ton (US)	lb
Kilogram, kg	1	0.001	0.00098	0.00110	2.20462
tonne, t (metric ton)	1000	1	0.98421	1.10231	2204.62
ton (UK, long ton)	1016.04642	1.01605	1	1.12000	2240
ton (US, short ton)	907.18	0.90718	0.89286	1	2000
Pound, lb	0.45359	0.00045359	0.00044643	0.00050	1

Appendix 6: Supplement to HCMI – Energy Use per Area

Energy per guest rooms metrics

Annual guest rooms energy consumption per m^2= Energy consumption for all guest rooms/Rooms Area

Annual energy consumption per available guest room = Energy consumption for all guest rooms/Number of hotel rooms

Energy consumption per ORN = Energy consumption for all guest rooms/Number of occupied hotel rooms

Energy per meeting space area or usage metrics

Annual meeting rooms energy consumption per m^2= Energy consumption for all meeting rooms/Meeting Space Area

Meeting rooms energy consumption per meeting hour = Energy consumption for all meeting rooms/ (365 x 10)

Note: Hotels which were closed for part of the reporting period should use the number of days they were open for, instead of the standard 365 days. Meeting rooms are assumed to be available for use for 10 hours per day.

Meeting rooms energy consumption per area of meeting space per hour = Meeting rooms energy consumption per meeting hour per sqm x surface of meeting space utilized

The energy consumption used by a client for a meeting is calculated by multiplying the *Meeting rooms energy consumption per area of meeting space on an hourly basis* by the number of hours that the client has utilized the meeting space, including the client setup and breakdown time, but excluding the hotel setup and breakdown time.

For example, a client has booked a meeting room for a three-day conference. Two days before the conference, the hotel sets up the room. The day before the conference, the client sets up the conference between 10:00 and 20:00. The conference then runs for three days for eight hours each day. On the last day, the client needs four hours to break down their set up. The hotel then cleans the meeting room and sets it up for another event. The number of hours used by the client is therefore: 10 + (3*8) + 4 = 38 hours.

Please note that the energy consumed during the hotel setup and breakdown of the meeting space is still captured in the overall calculations, but the allocation of the energy consumption is based on the client's utilization of the meeting space.

Appendix 7: HCMI Claims/Communications Guidance

This appendix provides high-level guidance on communicating information based on calculations performed using the HCMI Standard. Any claims or statements referencing HCMI should be clear, relevant, and accurate, and should not be misleading about what has been calculated and (where applicable) what has been independently verified/assured.

HCMI is designed to measure and report greenhouse gas (GHG) emissions associated with the operation of an individual hotel (and, where applicable, aggregated at the hotel group level). It was developed with reference to the GHG Protocol and other common GHG reporting standards. Users should review those standards directly and ensure consistency for any claims that extend beyond the scope of HCMI.

Use of HCMI for calculations does not in itself confer, imply, or allow “green”, “sustainable”, “carbon neutral”, “net zero”, or similar environmental claims about a hotel or hotel group. Use of the HCMI Standard does not imply endorsement, approval, certification, verification, or assurance by the World Sustainable Hospitality Alliance (WSHA).

Hotels that directly follow the core HCMI methodology can claim their emissions are “calculated according to the HCMI Standard v3.0”. Hotels that calculate emissions using some HCMI elements and some elements from different methodologies can claim their emissions are “calculated with reference to the HCMI Standard v3.0”. Where this wording is used, the user should disclose the main deviations from HCMI Standard v3.0.

Verification- and assurance-related claims (including any statements about assurance status) are subject to WSHA’s assurance system and related claims rules to be published. Until WSHA’s assurance system is published and effective, all HCMI results shall be treated as self-reported and unassured.

Appendix 8: HCMI 2026 Update – Key Changes

In 2025 the HCMI methodology was revised based on Members' recommendations regarding challenges in using HCMI. A brief summary of the changes is captured in the table below.

What	Revised
Scope 3 calculations	Methodologies for calculating Scope 3 Category 1, 3, and 5 emissions were added to the HCMI.
Scope 3 metric	Aggregate Scope 1, 2, and 3 intensity metrics added for reporting periods from 2026 onward.
Guest nights denominator	Supplementary output metrics now provide guest nights as an additional denominator, aligned with WSHA's Universal Sustainability key performance indicators (KPIs).
Refrigerant calculations	Estimation options were updated, and refrigerant emissions calculation was made mandatory.
Mobile fuel calculations	Mobile fuel calculations are made more specific instead of having a low default estimation option.
Verification	HCMI v3.0 strengthens audit-readiness and is designed to be compatible with independent verification/assurance, subject to WSHA's published assurance system (when available).
Estimated data share	New calculation showing share of emissions from estimated data to help review data quality.
Outlier data	New check for reviewing outlier data against benchmarks.
Renewable energy	Additional guidance around the application of Energy Attribute Certificates (EACs) and the treatment of renewable energy where the renewable attributes are not maintained. We recommend that users break down renewable energy information in the following format: • Total energy and heat generated on-site using renewable sources (using biomass, biofuel, hydropower, geothermal energy, solar, and wind), in kWh. • Total energy and heat purchased from suppliers using renewable sources (e.g., geothermal district heating, through green electricity supplier, Power Purchase Agreements (PPA), and EACs), in kWh.

Appendix 9: Sources

- WRI (https://ghgprotocol.org/calculation-tools-and-guidance)
- Cornell University School of Hotel Administration Center for Hospitality Research, Hotel Sustainability Benchmarking Index (https://hdl.handle.net/1813/115166)
- UK Environment Agency: https://www.gov.uk/government/organisations/department-for-environment-food-rural-affairs
- International Energy Agency (https://www.iea.org/),
- Climate Registry (http://www.theclimateregistry.org/),
- US Environmental Protection Agency (https://www.epa.gov/climate-change)
- UK Department for Energy Security and Net Zero (DESNZ) (http://www.decc.gov.uk/en/content/cms/statistics/climate_stats/gg_emissions/gg_emissions.aspx)
- Carbon Trust – Industrial Energy Efficiency Accelerator: Guide to the Laundries Sector (CTG064) (https://issuu.com/mikeglanfield/docs/ctg064-laundries-industrial-energy-)
- WMO Scientific Assessment of Ozone Depletion (https://csl.noaa.gov/assessments/ozone/2018/)
- UNEP Assessment Report (https://ozone.unep.org/sites/default/files/2019-04/RTOC-assessment-report-2018_0.pdf)
- GHG Protocol Calculation Tool (https://ghgprotocol.org/calculation-tools)
- IPCC Sixth Assessment Report (https://www.ipcc.ch/report/ar6/wg3/)

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