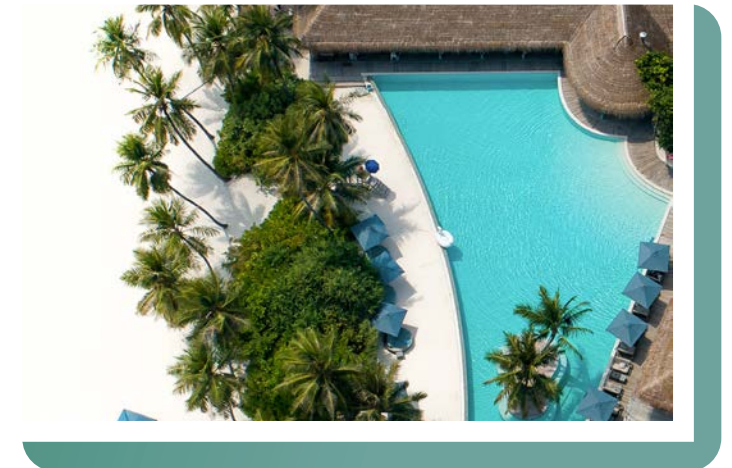


NET ZERO METHODOLOGY FOR HOTELS

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APPENDIX L

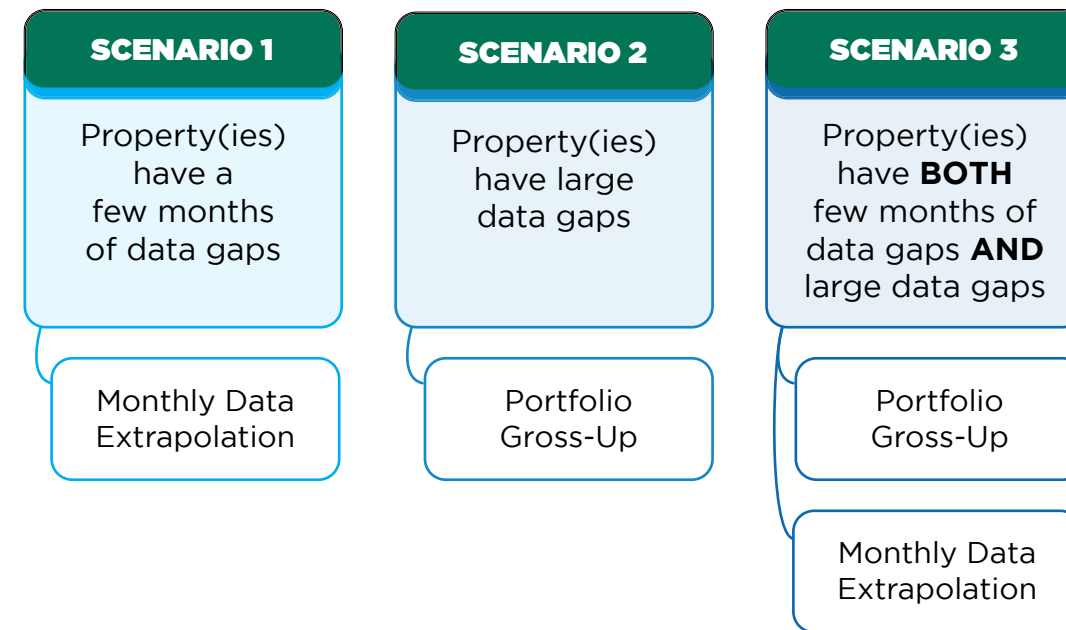
PORTFOLIO EXTRAPOLATION METHODOLOGY



APPENDIX L: PORTFOLIO EXTRAPOLATION METHODOLOGY

All hotel companies should ideally have data for the metrics and measures set out in Section 4 for all of their properties in the portfolio. However, realistically, data is not available completely for all properties and for all of the metrics. To address this, it would require an extrapolation of data based on whatever is available for the property and/or other properties. There are three data gap scenarios for the portfolio and different extrapolation methods can be applied accordingly (Figure L.1).

▼ **Figure L.1 Portfolio Data Gap Scenarios**



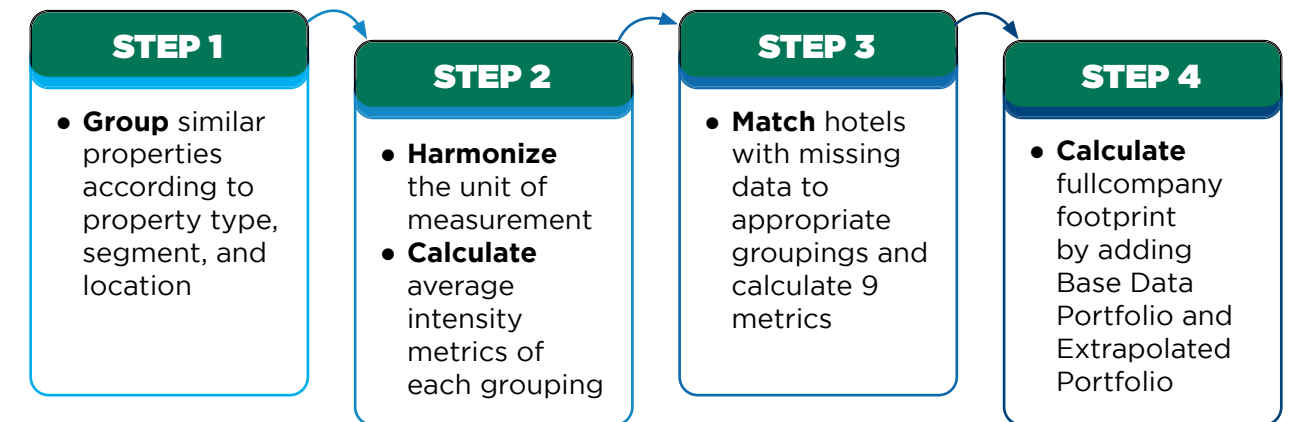
When only a few months of data is unavailable for one or a few properties (Scenario 1), the Monthly Data Extrapolation method can be applied. In this case, the average from adjacent months can be used as proxy to fill for the missing months. For example, when there is one month without data between two adjacent months with data, the average of the two months can be used for gap-filling. This method is most suitable if the monthly data variance is sensible.

When there are large data gaps (i.e. 10 to 12 months of missing data) for one or a few properties (Scenario 2), the Portfolio Gross-Up method can be applied. Ideally, a bespoke portfolio extrapolation method should be created based on the composition of property type, market segmentation, geographic segmentation, and internally derived coefficients from actual data. This process is outlined in Figure L.2 below, which will result in the metrics given in Section 4.2. However, where a representative data set from which to extrapolate data are not available or properties are in a location with extremely limited data, then industry coefficients can be used. The industry coefficients can be sourced from the latest CHSB tool¹.

When the portfolio data has a mixture of small and large data gaps (Scenario 3), both extrapolation methods can be applied one after the other. The Portfolio

Gross-up should be applied first to fill for large data gaps before applying Monthly Data Extrapolation for the smaller data gaps. The order of extrapolation is important as the Portfolio Gross-up should only use original data points and not include any extrapolated data points. However, if the monthly variance is too significant when applying Monthly Data Extrapolation, the smaller data gaps can also be gap-filled using the Portfolio Gross-up method.

▼ **Figure L.2 Portfolio Gross-up Extrapolation Steps**



- 1 Place similar hotels within the Base Data Portfolio of the company into groups according to property type, segment and location, as available.
- 2 Harmonize the unit of measurement of the energy and emissions data. Calculate the average emissions and energy intensity metrics of those groups. Should the groups be insufficiently representative of the hotel's missing data, use the coefficients derived from industry benchmarking according to the latest CHSB tool to best fit the geographic segmentation and property type segmentation.
- 3 Extrapolate for hotel's missing data by matching each hotel to the corresponding best available group, then multiply the groups' metrics by the hotel's floor area to arrive at the absolute figures.
- 4 Calculate the full company's footprint by summing the Base Data Portfolio + Extrapolated Portfolio.

Please note that extrapolation should only take place when the objective is to fill data gaps for company level reporting. This methodology should not be used to estimate the emissions and energy intensity for a particular property or properties for the purposes of, for example, completing an RFP. The process above is adapted from that set out in the Hotel Waste Measurement Methodology². For more details on how to extrapolate and when to use internal company coefficients or industry coefficients, please refer to the Hotel Waste Measurement Methodology.

¹ CHSB is available at www.greenview.sg/chsb-index

² Hotel Waste Measurement Methodology is available at http://hotelkitchen.org/wp-content/uploads/2021/09/HotelWasteMeasurementMethodology_SEP2021_v1.0.-1.pdf