



Nolan
Cornell
SC Johnson College of Business
CENTER FOR HOSPITALITY RESEARCH

Cornell Hotel Sustainability Benchmarking (CHSB) Index 2025: Carbon, Energy and Water

HOTEL BENCHMARK REPORT

Prepared By



Overview

We are proud to provide you with this confidential, property-level benchmarking and metrics report with the results of your energy, water, and carbon performance, as part of your company's enrollment in the [Cornell Hotel Sustainability Benchmarking \(CHSB\)](#) Index.

CHSB the industry's leading sustainability benchmarking solution, benchmarking data by market and segment on energy, water and carbon emissions from over 31,500 hotels around the world. The CHSB2025 Index is in its tenth year and presents the analysis 2023 calendar year data.

This report is confidential for internal data intelligence purposes only. In addition, a market-level data set is available free of charge via the Cornell University Center for Hospitality Research and HCMI metrics are globally available at www.hotelfootprints.org. CHSB data is used by governments, corporate customers, travel management companies and numerous other organizations to determine benchmarks and estimates for energy and water usage, and carbon footprints and calculate the carbon footprint of travel, for Scope 3 footprinting and carbon offsetting using the HCMI calculations we perform.

Please note that your report may be incomplete if required data was not submitted or if the data provided did not pass CHSB's strict validity testing protocols. In some markets, segmentation may be limited due to insufficient high-quality data submitted by hotels in those regions. As more hotels worldwide enroll in CHSB, our data and analytical outputs will continue to improve each year. Thank you for choosing CHSB as your trusted benchmarking solution.

For more guidance on how to read this report, please refer to the "How to Read CHSB Hotel Benchmark Report" section on page 12.

Should you have any questions or concerns, feel free to contact us at support@greenviewportal.com.

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About Greenview



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With offices in Singapore and Washington D.C., Greenview is the world's leading provider of sustainability programs, benchmarking, online software and data analytics for the hospitality and tourism industry. We support companies to design, implement, and monitor their ESG program and sustainability platforms to drive profitability, streamline data, keep ahead of trends, and provide effective communications for stakeholders. Our hospitality sector experience includes publicly traded REITs, private equity, the top ten global hotel chains, smaller regional chains, luxury, timeshare, and other organizations outside of hotels in travel and tourism.

About Cornell Center for Hospitality Research



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The mission of the Center for Hospitality Research (CHR) is to advance hospitality thought leadership by publishing and disseminating impactful and actionable research, including reports, briefs, tools, and case studies that industry leaders can put into practice today; facilitating the exchange of new ideas by bringing students, faculty, and industry professionals together at roundtables, panels, conferences, and other engaging events; and partnering with the other Centers and Institutes in the Cornell Peter and Stephanie Nolan School of Hotel Administration to maximize research, event, and networking collaborations.

Identifiers/Segmentation Information

PARTICIPANT CODE	SAMPLE_AAAA	 HOTEL NAME	Hotel Sample Name
ADDRESS	1, Sample Property Address 12345	 BRAND	SAMPLE
		 CODE	AAAA

 Country	United States	 Climate Zone 1	Temperate, dry summer, hot summer	 Stars	★★★
 City	Sacramento	 Climate Zone 2	Dry steppes and shrub or Moderate Continental Climate (Mediterranean Division)	 Asset Class	Limited Service
 Market Area	Sacramento-Arden-Arcade-Roseville, CA MSA	 Hotel Type: Group	NonResort	 STR Market Segment	Upscale
 CHSB Region	California State	 Hotel Type: Sub-Group	Airport Hotel	 Laundry	Washed On-site
		 Operational Type	Year-Round	 Location Type	Urban

Property Details

 Number of Rooms	126	 Floor Area in Square Meters	6,456	 HCMI Ratio	94%
 Room Tier	Large (Room Count)	 Floor Area in Square Feet	69,492	 HWMI Ratio	94%
 Floor Area Tier	Large (Area)	 Total Occupied Rooms	35,455	 Occupancy Rate	83%

Validity Testing

 Major Renovation or Not Open All 12 Months	 Water Data Completeness
 Energy Fences Per OCRM	 Water Fences Per OCRM
 Energy Fences Per Floor Area (SqM or SqFt)	 Water Fences Per Floor Area (SqM or SqFt)
 Electricity Data Completeness	 Gross Average Room Size
 Energy Data Completeness	 Net Average Room Size
 Number of Sources of Energy	 HCMI Ratio
 Occupancy Data Completeness	 Overall Variance Test
 Occupancy Level Fences	

Refer to page 12 for the description of each validity test.

 PASS	 FAIL	 FAIL-HIGH	 FAIL-LOW	 MISSING	 No Data Submitted	 FLAG
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Legend

Market Area	Major city and surrounding towns, such as Greater Metropolitan Area, Metropolitan Statistical Area, National Capital Region.
CHSB Region	Region that is sub-national (e.g. state/province) or trans-national (e.g. major tourist market that crosses national borders).
Climate Zone	(1) Koeppen-Geiger Climate Classification System, (2) Bailey's Ecoregions of the World (for US), WWF Ecoregions (for non-US).
Hotel Type: Group	Type of property (Resort or Non-resort)
Hotel Type: Sub-Group	Type of Resort (Beach Resort, Ski Resort, Integrated Resort, All Inclusive Resort (AIR), All Other Resort (AOR)) or Non-resort (All Suites or Extended Stay Hotel, Airport Hotel, Bed & Breakfast or Inn, Convention or Conference Hotel, All Other Hotel (AOH))
Operational Type	Type of property based on when it is open and operational (Year-Round, Summer Seasonal, or Winter Seasonal)
Stars	Star classification estimated from 1 to 5; half stars are rounded down.
Asset Class	Full Service or Limited Service.
STR Market Segment	Chain scale segment according to STR Global Chain Scales; independents assigned at estimated level.
Laundry	Whether laundry is done onsite or outsourced.
Location Type*	Whether the property is in an Urban, Suburban, Small Metro/Town or Rural/Highway location (for US only).
Room Tier	Tiering classification of room count based Asset Class and Hotel Type - Group. - Full Service Resort: Small (<115 rooms), Medium (115-249 rooms), Large (250-449 rooms), Very Large (>449 rooms) - Full Service Non-resort: Small (<120 rooms), Medium (120-219 rooms), Large (220-379 rooms), Very Large (>379 rooms) - Limited Service: Small (<78 rooms), Medium (78-104 rooms), Large (105-164 rooms), Very Large (>164 rooms)
Floor Area Tier	Tiering classification of conditioned space floor area based Asset Class and Hotel Type - Group. - Full Service Resort: Small (<11,500 sqm), Medium (11,500-28,000 sqm), Large (28,000-55,000 sqm), Very Large (>55,000 sqm) - Full Service Non-resort: Small (<6,300 sqm), Medium (6,300-18,000 sqm), Large (18,000-45,000 sqm), Very Large (>45,000 sqm) - Limited Service: Small (<3,800 sam), Medium (3,800-5,700 sam), Large (5,700-9,500 sam), Very Large (>9,500 sam)
HCMI Ratio	Percentage of total floor area apportioned to Guestrooms per Hotel Carbon Measurement Initiative (HCMI).
HWMI Ratio	Percentage of total floor area apportioned to Guestrooms per Hotel Water Measurement Initiative (HWMI).
Fences	Lower and upper limit boundaries used in Validity Testing, determined based on previous CHSB data set.
OCRM/Floor Area	Validity Testing is based on intensity per OCRM (occupied room) or pro-rated conditioned floor area (SqM or SqFt).



ENERGY (kWh)

Total Energy (kWh) 1,280,655

Hotels in the same comp set grouping share the same laundry status as your hotel

✓ 36.12
✓ 198.37
✓ 18.43

Energy Usage Per OCRM
Energy Usage Per SqM
Energy Usage Per SqFt

▲ 8.00%
▲ 10.00%
✓ 0.80

% Energy from Renewables (w/o Grid Renewables)
% Electricity from Renewables (w/o Grid)
Ratio of Electric to Non-electric Energy

✓ 36.12
✓ 198.37

Benchmarked Energy Usage Per OCRM
Benchmarked Energy Usage Per SqM

	COMP SET GROUPING		INTENSITY METRIC	COMP SET SIZE	DECILE TIER	
Market Area	Asset Class + Hotel Type + Stars + Room Tier	OCRMS		19	4th decile	
			Floor Area	18	7th decile	
	Asset Class + Hotel Type + Stars + Floor Area Tier	OCRMS		21	3rd decile	
			Floor Area	21	7th decile	
	Asset Class + Hotel Type + Stars	OCRMS		29	4th decile	
			Floor Area	26	7th decile	
	Asset Class + Hotel Type	OCRMS		50	5th decile	
			Floor Area	42	8th decile	
	Asset Class	OCRMS		50	6th decile	
			Floor Area	42	8th decile	
	Market Area Only	OCRMS		57	6th decile	
			Floor Area	48	8th decile	

	COMP SET GROUPING		INTENSITY METRIC	COMP SET SIZE	DECILE TIER	
Country	Asset Class + Hotel Type + Stars + Room Tier	OCRMS		1653	2nd decile	
			Floor Area	1539	3rd decile	
	Asset Class + Hotel Type + Stars + Floor Area Tier	OCRMS		1494	2nd decile	
			Floor Area	1495	3rd decile	
	Asset Class + Hotel Type + Stars	OCRMS		2868	2nd decile	
			Floor Area	2577	3rd decile	
	Asset Class + Hotel Type	OCRMS		6415	2nd decile	
			Floor Area	4461	4th decile	
	Asset Class	OCRMS		6415	2nd decile	
			Floor Area	4461	4th decile	
	Country Only	OCRMS		7696	2nd decile	
			Floor Area	5486	4th decile	



ENERGY (kWh)

Total Energy (kWh) 1,280,655

Hotels in the same comp set grouping share the same laundry status as your hotel

	COMP SET GROUPING		INTENSITY METRIC	COMP SET SIZE	DECILE TIER	
Climate Zone 1	Asset Class + Hotel Type + Stars + Room Tier	OCRMS	Floor Area	42	3rd decile	
			Floor Area	41	5th decile	
	Asset Class + Hotel Type + Stars + Floor Area Tier	OCRMS	Floor Area	45	3rd decile	
			Floor Area	45	5th decile	
	Asset Class + Hotel Type + Stars	OCRMS	Floor Area	80	3rd decile	
			Floor Area	76	5th decile	
	Asset Class + Hotel Type	OCRMS	Floor Area	155	4th decile	
			Floor Area	116	5th decile	
	Asset Class	OCRMS	Floor Area	155	4th decile	
			Floor Area	116	5th decile	
	Climate Zone 1 Only	OCRMS	Floor Area	269	3rd decile	
			Floor Area	228	4th decile	

	COMP SET GROUPING		INTENSITY METRIC	COMP SET SIZE	DECILE TIER	
Climate zone 2	Asset Class + Hotel Type + Stars + Room Tier	OCRMS	Floor Area	24	3rd decile	
			Floor Area	24	6th decile	
	Asset Class + Hotel Type + Stars + Floor Area Tier	OCRMS	Floor Area	31	3rd decile	
			Floor Area	31	7th decile	
	Asset Class + Hotel Type + Stars	OCRMS	Floor Area	46	3rd decile	
			Floor Area	42	7th decile	
	Asset Class + Hotel Type	OCRMS	Floor Area	107	5th decile	
			Floor Area	77	7th decile	
	Asset Class	OCRMS	Floor Area	107	5th decile	
			Floor Area	77	7th decile	
	Climate Zone 2 Only	OCRMS	Floor Area	117	5th decile	
			Floor Area	84	7th decile	

Legend

Benchmarked Energy Usage Intensity	Energy usage per OCRM or per pro-rated conditioned floor area (SqM or SqFt) used when comparing against Comp Set Groupings, with purchased chilled water data normalized by applying a COP of 4.0.
Comp Set Grouping	Benchmark is based on Market Area, Climate Zones or Country. Grouping of properties with matching attributes as below:
Climate Zone	(1) Koeppen-Geiger Climate Classification System, (2) Bailey's Ecoregions of the World (for US), WWF Ecoregions (for non-US).
Asset Class	Full Service or Limited Service.
Hotel Type	Hotel Type - Group: Resort or non-resort property
Stars	Star classification estimated from 1 to 5; half stars are rounded down.
Room Tier	Tiering classification of room count based Asset Class and Hotel Type - Group
Floor Area Tier	Tiering classification of conditioned space floor area based Asset Class and Hotel Type - Group.
Intensity Metric	Benchmark is based on intensity per OCRM (occupied room) or pro-rated conditioned floor area (SqM or SqFt).
Comp Set Size	Number of properties with matching attributes in the same Comp Set and passed validity testing.
Decile Tier	The Hotel's positioning within Comp Set in deciles (i.e. Comp Set divided into 10 equal parts); Hotels in the 2nd decile performed better than 80% of the Comp Set.
Insufficient Data Set	Insufficient properties within the comp set grouping passed the validity tests to generate a benchmark.
Not Benchmarked	Property did not pass the validity tests required to generate a benchmark.
Comp Sets in bold	Best available benchmarks are in bold . This is the most granular and relevant benchmark for the hotel.



WATER (L)

Total Water (Cubic Meters) 15,255

Hotels in the same comp set grouping share the same laundry status as your hotel

✓ 430.26

✓ 2,362.92

✓ 219.52

✓ 457.89

✓ 1.25

Water Usage Per OCRM

Water Usage Per SqM

Water Usage per SqFt

HWMI Rooms Footprint per OCRM

HWMI Meetings Footprint Per hour Per SqM

	COMP SET GROUPING		INTENSITY METRIC	COMP SET SIZE	DECILE TIER	
Market Area	Asset Class + Hotel Type + Stars + Room Tier		OCRMS	20	3rd decile	
			Floor Area	20	5th decile	
	Asset Class + Hotel Type + Stars + Floor Area Tier		OCRMS	22	3rd decile	
			Floor Area	22	5th decile	
	Asset Class + Hotel Type + Stars		OCRMS	30	3rd decile	
			Floor Area	30	5th decile	
	Asset Class + Hotel Type		OCRMS	50	4th decile	
			Floor Area	50	5th decile	
	Asset Class		OCRMS	50	4th decile	
			Floor Area	50	5th decile	
	Market Area Only		OCRMS	57	4th decile	
			Floor Area	56	5th decile	

	COMP SET GROUPING		INTENSITY METRIC	COMP SET SIZE	DECILE TIER	
Country	Asset Class + Hotel Type + Stars + Room Tier		OCRMS	1614	3rd decile	
			Floor Area	1580	5th decile	
	Asset Class + Hotel Type + Stars + Floor Area Tier		OCRMS	1465	3rd decile	
			Floor Area	1466	5th decile	
	Asset Class + Hotel Type + Stars		OCRMS	2803	5th decile	
			Floor Area	2729	7th decile	
	Asset Class + Hotel Type		OCRMS	6068	6th decile	
			Floor Area	5704	8th decile	
	Asset Class		OCRMS	6068	6th decile	
			Floor Area	5704	8th decile	
	Country Only		OCRMS	7312	5th decile	
			Floor Area	6868	8th decile	



WATER (L)

Total Water (Cubic Meters) **15,255**

Hotels in the same comp set grouping share the same laundry status as your hotel

Climate Zone 1	COMP SET GROUPING		INTENSITY METRIC	COMP SET SIZE	DECILE TIER	
	Asset Class + Hotel Type + Stars + Room Tier		OCRMS	44	4th decile	
			Floor Area	44	5th decile	
	Asset Class + Hotel Type + Stars + Floor Area Tier		OCRMS	47	3rd decile	
			Floor Area	47	5th decile	
	Asset Class + Hotel Type + Stars		OCRMS	81	4th decile	
			Floor Area	81	6th decile	
	Asset Class + Hotel Type		OCRMS	151	5th decile	
			Floor Area	144	6th decile	
	Asset Class		OCRMS	151	5th decile	
			Floor Area	144	6th decile	
	Climate Zone 1 Only		OCRMS	266	4th decile	
			Floor Area	256	6th decile	

Climate Zone 2	COMP SET GROUPING		INTENSITY METRIC	COMP SET SIZE	DECILE TIER	
	Asset Class + Hotel Type + Stars + Room Tier		OCRMS	26	3rd decile	
			Floor Area	26	4th decile	
	Asset Class + Hotel Type + Stars + Floor Area Tier		OCRMS	33	4th decile	
			Floor Area	33	5th decile	
	Asset Class + Hotel Type + Stars		OCRMS	48	4th decile	
			Floor Area	47	6th decile	
	Asset Class + Hotel Type		OCRMS	104	5th decile	
			Floor Area	98	6th decile	
	Asset Class		OCRMS	104	5th decile	
			Floor Area	98	6th decile	
	Climate Zone 2 Only		OCRMS	114	5th decile	
			Floor Area	106	6th decile	

Legend

HWMI Rooms Footprint	(1) Water usage per OCRM and (2) Water usage per meeting hour by meeting space (SqM or SqFt) according to the Hotel Water Measurement Initiative (HWMI) methodology.
Comp Set Grouping	Benchmark is based on Market Area, Climate Zones or Country. Grouping of properties with matching attributes as below:
Climate Zone	(1) Koeppen-Geiger Climate Classification System, (2) Bailey's Ecoregions of the World (for US), WWF Ecoregions (for non-US).
Asset Class	Full Service or Limited Service.
Hotel Type	Hotel Type - Group: Resort or non-resort property
Stars	Star classification estimated from 1 to 5; half stars are rounded down.
Room Tier	Tiering classification of room count based Asset Class and Hotel Type - Group
Floor Area Tier	Tiering classification of conditioned space floor area based Asset Class and Hotel Type - Group.
Intensity Metric	Benchmark is based on intensity per OCRM (occupied room) or pro-rated conditioned floor area (SqM or SqFt).
Comp Set Size	Number of properties with matching attributes in the same Comp Set and passed validity testing.
Decile Tier	The Hotel's positioning within Comp Set in deciles (i.e. Comp Set divided into 10 equal parts); Hotels in the 2nd decile performed better than 80% of the Comp Set.
Insufficient Data Set	Insufficient properties within the comp set grouping passed the validity tests to generate a benchmark.
Not Benchmarked	Property did not pass the validity tests required to generate a benchmark.
Comp Sets in bold	Best available benchmarks are in bold . This is the most granular and relevant benchmark for the hotel.



CARBON (kgCO2e)

Total Carbon Emissions (KgCO2e) 269,555

Hotels in the same comp set grouping share the same laundry status as your hotel

- ✓ 2,353.61
- ✓ 7.60
- ✓ 41.75
- ✓ 3.88

Carbon Emissions Per Room

Carbon Emissions Per OCRM

Carbon Emissions per SqM

Carbon Emissions per SqFt

	COMP SET GROUPING		INTENSITY METRIC	COMP SET SIZE	DECILE TIER	
Market Area	Asset Class + Hotel Type + Stars + Room Tier	OCRMS	Floor Area	19	4th decile	
				18	7th decile	
	Asset Class + Hotel Type + Stars + Floor Area Tier	OCRMS	Floor Area	21	3rd decile	
				21	7th decile	
	Asset Class + Hotel Type + Stars	OCRMS	Floor Area	29	4th decile	
				26	7th decile	
	Asset Class + Hotel Type	OCRMS	Floor Area	50	5th decile	
				42	7th decile	
	Asset Class	OCRMS	Floor Area	50	5th decile	
				42	7th decile	
	Market Area Only	OCRMS	Floor Area	57	4th decile	
				48	7th decile	

	COMP SET GROUPING		INTENSITY METRIC	COMP SET SIZE	DECILE TIER	
Country	Asset Class + Hotel Type + Stars + Room Tier	OCRMS	Floor Area	1653	Top decile	
				1539	2nd decile	
	Asset Class + Hotel Type + Stars + Floor Area Tier	OCRMS	Floor Area	1494	Top decile	
				1495	Top decile	
	Asset Class + Hotel Type + Stars	OCRMS	Floor Area	2868	2nd decile	
				2577	2nd decile	
	Asset Class + Hotel Type	OCRMS	Floor Area	6415	3rd decile	
				4461	4th decile	
	Asset Class	OCRMS	Floor Area	6415	3rd decile	
				4461	4th decile	
	Country Only	OCRMS	Floor Area	7696	4th decile	
				5486	4th decile	



CARBON (kgCO₂e)

Total Carbon Emissions (KgCO₂e) **269,555**

Hotels in the same comp set grouping share the same laundry status as your hotel

Climate Zone 1	COMP SET GROUPING		INTENSITY METRIC	COMP SET SIZE	DECILE TIER	
	Asset Class + Hotel Type + Stars + Room Tier	OCRMS	42	3rd decile		
		Floor Area	41	5th decile		
	Asset Class + Hotel Type + Stars + Floor Area Tier	OCRMS	45	3rd decile		
		Floor Area	45	5th decile		
	Asset Class + Hotel Type + Stars	OCRMS	80	3rd decile		
		Floor Area	76	5th decile		
	Asset Class + Hotel Type	OCRMS	155	4th decile		
		Floor Area	116	5th decile		
	Asset Class	OCRMS	155	4th decile		
		Floor Area	116	5th decile		
Climate Zone 1 Only	OCRMS	269	3rd decile			
	Floor Area	228	3rd decile			

Climate Zone 2	Comp Set Grouping		Intensity Metric	Comp Set Size	Decile Tier	
	Asset Class + Hotel Type + Stars + Room Tier	OCRMS	24	3rd decile		
		Floor Area	24	5th decile		
	Asset Class + Hotel Type + Stars + Floor Area Tier	OCRMS	31	3rd decile		
		Floor Area	31	6th decile		
	Asset Class + Hotel Type + Stars	OCRMS	46	3rd decile		
		Floor Area	42	6th decile		
	Asset Class + Hotel Type	OCRMS	107	5th decile		
		Floor Area	77	6th decile		
	Asset Class	OCRMS	107	5th decile		
		Floor Area	77	6th decile		
Climate Zone 2 Only	OCRMS	117	5th decile			
	Floor Area	84	6th decile			

Legend

Comp Set Grouping	Benchmark is based on Market Area, Climate Zones or Country. Grouping of properties with matching attributes as below:
Climate Zone	(1) Koeppen-Geiger Climate Classification System, (2) Bailey's Ecoregions of the World (for US), WWF Ecoregions (for non-US).
Asset Class	Full Service or Limited Service.
Hotel Type	Hotel Type - Group: Resort or non-resort property
Stars	Star classification estimated from 1 to 5; half stars are rounded down.
Room Tier	Tiering classification of room count based Asset Class and Hotel Type - Group
Floor Area Tier	Tiering classification of conditioned space floor area based Asset Class and Hotel Type - Group.
Intensity Metric	Benchmark is based on intensity per OCRM (occupied room) or pro-rated conditioned floor area (\$/qm or \$/sqft).
Comp Set Size	Number of properties with matching attributes in the same Comp Set and passed validity testing.
Decile Tier	The Hotel's positioning within Comp Set in deciles (i.e. Comp Set divided into 10 equal parts); Hotels in the 2nd decile performed better than 80% of the Comp Set.
Insufficient Data Set	Insufficient properties within the comp set grouping passed the validity tests to generate a benchmark.
Not Benchmarked	Property did not pass the validity tests required to generate a benchmark.
Comp Sets in bold	Best available benchmarks are in bold . This is the most granular and relevant benchmark for the hotel.



HCMi (kgCO₂e)

HCMi Carbon Footprint (KgCO₂e) 299,005

Hotels in the same comp set grouping share the same laundry status as your hotel



8.43

HCMi Rooms Footprint Per OCRM

Market Area	COMP SET GROUPING	INTENSITY METRIC	COMP SET SIZE	DECILE TIER	
	Asset Class + Hotel Type + Stars + Room Tier	OCRMS	19	4th decile	
	Asset Class + Hotel Type + Stars + Floor Area Tier	OCRMS	21	3rd decile	
	Asset Class + Hotel Type + Stars	OCRMS	29	4th decile	
	Asset Class + Hotel Type	OCRMS	48	4th decile	
	Asset Class	OCRMS	48	4th decile	
	Market Area Only	OCRMS	54	4th decile	

Country	COMP SET GROUPING	INTENSITY METRIC	COMP SET SIZE	DECILE TIER	
	Asset Class + Hotel Type + Stars + Room Tier	OCRMS	1607	Top decile	
	Asset Class + Hotel Type + Stars + Floor Area Tier	OCRMS	1480	Top decile	
	Asset Class + Hotel Type + Stars	OCRMS	2773	Top decile	
	Asset Class + Hotel Type	OCRMS	6036	3rd decile	
	Asset Class	OCRMS	6036	3rd decile	
	Country Only	OCRMS	7105	4th decile	



HCMI (kgCO₂e)

HCMI Carbon Footprint (KgCO₂e) **299,005**

Hotels in the same comp set grouping share the same laundry status as your hotel

Climate Zone 1	COMP SET GROUPING	INTENSITY METRIC	COMP SET SIZE	DECILE TIER	
	Asset Class + Hotel Type + Stars + Room Tier	OCRMS	40	3rd decile	
	Asset Class + Hotel Type + Stars + Floor Area Tier	OCRMS	44	2nd decile	
	Asset Class + Hotel Type + Stars	OCRMS	77	2nd decile	
	Asset Class + Hotel Type	OCRMS	143	3rd decile	
	Asset Class	OCRMS	143	3rd decile	
	Climate Zone 1 Only	OCRMS	216	2nd decile	

Climate Zone 2	COMP SET GROUPING	INTENSITY METRIC	COMP SET SIZE	DECILE TIER	
	Asset Class + Hotel Type + Stars + Room Tier	OCRMS	24	3rd decile	
	Asset Class + Hotel Type + Stars + Floor Area Tier	OCRMS	31	3rd decile	
	Asset Class + Hotel Type + Stars	OCRMS	45	3rd decile	
	Asset Class + Hotel Type	OCRMS	99	4th decile	
	Asset Class	OCRMS	99	4th decile	
	Climate Zone 2 Only	OCRMS	109	4th decile	

Legend

HCMI Rooms Footprint	Carbon footprint per OCRM according to the Hotel Carbon Measurement Initiative (HCMI) methodology.
Comp Set Grouping	Benchmark is based on Market Area, Climate Zones or Country. Grouping of properties with matching attributes as below:
Climate Zone	(1) Koeppen-Geiger Climate Classification System, (2) Bailey's Ecoregions of the World (for US), WWF Ecoregions (for non-US).
Asset Class	Full Service or Limited Service.
Hotel Type	Hotel Type - Group: Resort or non-resort property
Stars	Star classification estimated from 1 to 5; half stars are rounded down.
Room Tier	Tiering classification of room count based Asset Class and Hotel Type - Group
Floor Area Tier	Tiering classification of conditioned space floor area based Asset Class and Hotel Type - Group.
Intensity Metric	Benchmark is based on intensity per OCRM (occupied room).
Comp Set Size	Number of properties with matching attributes in the same Comp Set and passed validity testing.
Decile Tier	The Hotel's positioning within Comp Set in deciles (i.e. Comp Set divided into 10 equal parts); Hotels in the 2nd decile performed better than 80% of the Comp Set.
Insufficient Data Set	Insufficient properties within the comp set grouping passed the validity tests to generate a benchmark.
Not Benchmarked	Property did not pass the validity tests required to generate a benchmark.
Comp Sets in bold	Best available benchmarks are in bold . This is the most granular and relevant benchmark for the hotel.

How to Read CHSB Hotel Benchmark Report

Step 1

The **Identifiers/Segmentation Information** and **Property Details** sections provides the hotel's details and attributes.

Refer to the **Legend** section for description of attributes.

Identifiers/Segmentation Information			
PARTICIPANT CODE	Refresh Hospitality_REF0003	HOTEL NAME	Refresh Hotel Paris
ADDRESS	55 rue de la Vierge Paris, Paris 75006	BRAND	Refresh Hotels
		CODE	REF0003
Country	France	Climate Zone 1	Temperate, no dry season, hot summer
City	Paris	Climate Zone 2	Permanently Humid Eastern Oceanic Broadleaf Forests
Market Area	Paris	Hotel Type: Group	Nonresort
CHSB Region	Not Applicable	Hotel Type: Sub-Group	All Other Hotel (ACH)
		Operational Type	Year-Round
		Stars	★★★★★
		Asset Class	Full Service
		S&B Market Segment	Luxury
		Laundry	Off-site
		Location Type*	Urban

Property Details			
Number of Rooms	100	Floor Area in Square Meters	6,932
Room Tier	Small (Room Count)	Floor Area in Square Feet	74,616
Floor Area Tier	Medium (Area)	Total Occupied Rooms	26,684
		HCMI Ratio	85%
		HWMI Ratio	85%
		Occupancy Rate	85%

Validity Testing	
Major Renovation or Not Open All 12 Months	Water Data Completeness
Energy Fences Per OCRM	Water Fences Per OCRM
Energy Fences Per Floor Area (SqM or SqFt)	Water Fences Per Floor Area (SqM or SqFt)
Electricity Data Completeness	Ratio of Average Number of Rooms to Gross Floor Area
Energy Data Completeness	Ratio of Average Number of Rooms to Net Floor Area
Number of Sources of Energy	HCMI Ratio
Occupancy Data Completeness	Overall Variance Test
Occupancy Level Fences	
PASS	FAIL
FAIL-HIGH	FAIL-LOW
MISSING	No Data Submitted
	FLAG

Step 2

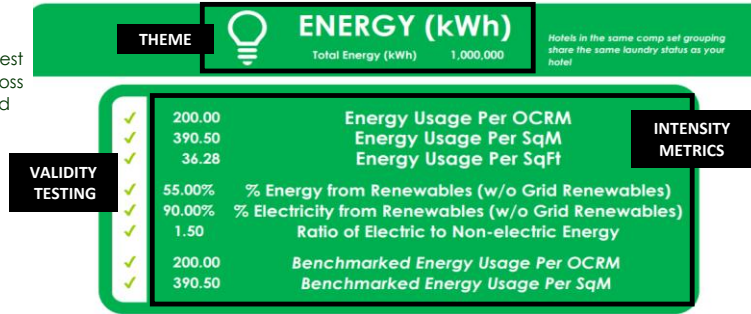
The **Validity Testing** section shows whether potential errors and missing data was identified from the data submitted.

Legend

Major Renovation or Not Open All 12 Months	This test checks if a property (a) underwent significant renovation, or (b) closed all or significant part of its floor area for a portion of the year. Only properties that are open for all 12 months or seasonal properties are benchmarked.	Affects all benchmarks
Occupancy Data Completeness	This test checks if data is reported for the full 12 months. NO DATA if occupied rooms data was not submitted, MISSING if there is at least 1 month of missing data.	Affects per OCRM benchmarks
Occupancy Level Fences	This test checks if a property's occupancy rate is too high or too low. The thresholds are determined based on CHSB data from the prior year.	Affects per OCRM benchmarks
Energy Fences Per OCRM	This test checks if a property's energy usage per occupied room is either higher or lower than the upper or lower threshold. The thresholds are determined based on CHSB data from the prior year.	Affects energy, carbon, and HCMI per OCRM benchmarks
Energy Fences Per Floor Area (SqM or SqFt)	This test checks if a property's energy usage per floor area is either higher or lower than the upper or lower threshold. The thresholds are determined based on CHSB data from the prior year.	Affects energy per unit floor area benchmarks
Electricity Data Completeness	This test checks if electricity data is reported for the full 12 months. NO DATA if there is no electricity data, MISSING if there is less than 12 months of electricity data.	Affects all energy, carbon, and HCMI benchmarks
Energy Data Completeness	This test checks if 12 months of data for all energy types is submitted. NO DATA if no energy data is submitted, MISSING if there are energy types with <12 months of data. Zeros are not considered missing.	Affects all energy, carbon, and HCMI benchmarks
Number of Sources of Energy	This test checks the number of energy sources that the hotel has submitted data for. PASS if there are 2 to 5 energy sources and flagged if otherwise.	Affects all energy, carbon, and HCMI benchmarks
Water Data Completeness	This test checks if data is reported for the full 12 months. NO DATA if there is no water data submitted, MISSING if there are water types with less than 12 months of data.	Affects all water benchmarks
Water Fences Per OCRM	This test checks if a property's water usage per occupied room is either higher or lower than the upper or lower threshold. The thresholds are determined based on CHSB data from the prior year.	Affects water per OCRM benchmarks
Water Fences Per Floor Area (SqM or SqFt)	This test checks if a property's water usage per occupied room is either higher or lower than the upper or lower threshold. The thresholds are determined based on CHSB data from the prior year.	Affects water per unit floor area benchmarks
Gross Average Room Size	This test checks if a property's gross average room size is too high or too low.	Affects all per unit floor area benchmarks
Net Average Room Size	This test checks if a property's net average room size is too high or too low.	Affects HCMI benchmarks
HCMI Ratio	This test checks if the percentage of floor area attributed to guestrooms is too high or too low.	Affects HCMI benchmarks
Overall Variance Test	This test checks if the month-on-month fluctuations are extremely large, meaning there might be errors. "FLAG" if the property's month-on-month variance was greater than 80%, or an overall variance of 400% between the highest and lowest month, for at least one energy/water/operations data point.	Does not affect benchmark

Step 3

Hotel's intensity metrics and the validity test results for each metric are available across all 4 themes (Energy, Water, Carbon, and HCMl).



Step 4

Each performance benchmark consists of:

- 1 Comp Set Grouping** - Market Area, Country and Climate Zones 1 & 2 categories have different groupings with varying levels of granularity. **Bolded** Comp set is the most granular benchmark available for the property
- 2 Intensity Metric** - Intensity per OCRMS (occupied room) or Floor Area (SqM or SqFt)
- 3 Comp Set Size** - Number of peers within the same Comp Set that passed validity testing
- 4 Decile Tier** - Positioning among peers within same Comp Set in deciles (i.e. Comp Set divided into 10 equal parts)

	1	2	3	EXAMPLE	4
	COMP SET GROUPING	INTENSITY METRIC	COMP SET SIZE		DECILE TIER
Country	Asset Class + Hotel Type + Stars + Room Tier	OCRMS	1501	3rd decile	
		Floor Area	1503	3rd decile	
	Asset Class + Hotel Type + Stars + Floor Area Tier	OCRMS	1530	3rd decile	
		Floor Area	1537	4th decile	
	Asset Class + Hotel Type + Stars	OCRMS	2546	3rd decile	
		Floor Area	2529	4th decile	
	Asset Class + Hotel Type	OCRMS	5179	4th decile	
		Floor Area	4987	5th decile	
	Asset Class	OCRMS	5179	4th decile	
		Floor Area	4987	5th decile	
	Country Only	OCRMS	6201	4th decile	
		Floor Area	5991	4th decile	

A better decile ranking indicates better performance of the Hotel compared to its Comp Set (e.g., being in the 3rd decile means the hotel performed better than 70% of its Comp Set)