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## 1 INTRODUCTION

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This user guide provides users of the CHPA Carbon Calculation Tool with a worked example of how to navigate the Tool.

As step-by-step instructions have been provided in the *Overview* tab of the Tool, the purpose of this user guide is to provide an additional illustration of how the Tool can be used, using a fictional case study of Homely Corporate Housing.

Homely Corporate Housing is a United States-based corporate housing company that operates six units globally. It has recently set up a Sustainability Team, led by Jane Doe. Using the Tool, Jane Doe has been tasked to provide the leadership team of Homely Corporate Housing, as well as one of its clients, Best Buyer Inc., with information on its units' carbon footprint performance.

# CHPA Carbon Calculation Tool

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## 2 UNIT DETAILS TAB

Jane Doe starts by gathering and inputting general information, as well as the details of all the units that will be included in the carbon footprint calculations.

### 2.1 GENERAL DETAILS

- **Name of Company:** Homely Corporate Housing
- **Name of Contact Person:** Jane Doe from the Sustainability Team
- **Reporting Year:** Homely Corporate Housing will be providing data from the year 2024.
- **Rental Currency:** Rental cost information is in United States Dollar (USD).

CHPA Carbon Calculation Tool		Key	
			To be manually completed
			Select from dropdown
			Automatically calculated/Not applicable
			Requirement type
Company Details			
Name of Company	Homely Corporate Housing		
Name of Contact Person	Jane Doe		
Reporting Period			
<i>The reporting period is any 12-month period that will be the same for all units. Please select the start period, and the end period will be automatically pre-populated.</i>			
<i>For years where emission factors are not available, the latest available set of emission factors will be used (e.g. for 2025 data, the 2024 emission factor will be used until 2025 emission factors are available).</i>			
Start	Jan	2024	
End	Dec	2024	
Rental Currency			
<i>If rental cost is available and you would like to obtain spend-based emission coefficients, select the currency which will apply to all units. If not, select "No cost will be inputted".</i>			
Rental Currency	United States Dollar (USD)		

## 2.2 UNIT DETAILS

Homely Corporate Housing has six units globally that were in operation in 2024. The unit details are listed below.

### Property 1 (Kings Lovely Apartments)

- **ID No.:** UK-KLA3B
- **Address:** 345 Kings Way, Unit 3B, London, United Kingdom
- **Building Name:** Kings Lovely Apartments
- **Unit Type:** Serviced Apartment
- **Unit Characteristics:** 2 Bedrooms, 2 Bathrooms, Full Kitchen, shared Washer/Dryer facility in common area, study included, no EV charging station
- **Months in Operation<sup>1</sup>:** 8.5
- **Gross Floor Area:** 240 sqm
- **Rental Cost:** 163,000 USD

### Property 2 (Kings Lovely Apartments)

- **ID No.:** UK-KLA5A
- **Address:** 345 Kings Way, Unit 5A, London, United Kingdom
- **Building Name:** Kings Lovely Apartments
- **Unit Type:** Serviced Apartment
- **Unit Characteristics:** 1 Bedroom, 1 Bathroom, Kitchenette, shared Washer/Dryer facility in common area, no EV charging station
- **Months in Operation:** 6.5
- **Gross Floor Area:** 75 sqm
- **Rental Cost:** 39,500 USD

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<sup>1</sup> In the case of a unit that was only occupied for a portion of the full operation period, there are two approaches that users can take. For example, Kings Lovely Apartment Unit 3B was leased by Homely Corporate Housing for the full 2024 year but was only occupied for 8.5 months. To obtain Unit 3B's overall performance for the entire year, the number of months in operation would be 12. To obtain Unit 3B's performance for the specific period during which it was occupied, the number of months in operation would be 8.5.

### Property 3 (Encino House)

- **ID No.:** US-ECH
- **Address:** 46 Encino Way, Illinois, United States, IL 60606
- **Building Name:** Encino House
- **Unit Type:** Single-Family Home
- **Unit Characteristics:** 4 Bedrooms, 2 Bathrooms, Full Kitchen, in-unit Washer/Dryer facility, garage with EV charging station attached, solar panels installed on rooftop
- **Months in Operation:** 3
- **Gross Floor Area:** 3,630 sqft
- **Rental Cost:** 82,030 USD

### Property 4 (Homestead House)

- **ID No.:** US-HSH0701
- **Address:** Black Wood Rd, #07-01, San Diego, United States, CA 92101
- **Building Name:** Homestead House
- **Unit Type:** Apartment
- **Unit Characteristics:** 4 Bedrooms, 3 Bathrooms, Full Kitchen, in-unit Washer/Dryer, enclosed balcony attached, no EV Charging Station
- **Months in Operation:** 12
- **Gross Floor Area:** 3,000 sqft
- **Rental Cost:** 244,000 USD

### Property 5 (Kovan Gardens)

- **ID No.:** SG-KVG1204
- **Address:** 12 Kovan Street, #02-04, Singapore
- **Building Name:** Kovan Gardens
- **Unit Type:** Condominium
- **Unit Characteristics:** 2 Bedrooms, 1 Bathroom, Kitchenette, shared Washer/Dryer facility in common area, no EV charging station
- **Months in Operation:** 12
- **Gross Floor Area:** 75 sqm
- **Rental Cost:** 48,000 SGD

### Property 6 (Kovan Cove)

- **ID No.:** SG-KVC
- **Address:** 16 Kovan Drive, Singapore
- **Building Name:** Kovan Cove
- **Unit Type:** Semi-Detached House
- **Unit Characteristics:** 4 Bedrooms, 2 Bathrooms, Full Kitchen, in-unit Washer/Dryer, EV charging station attached, solar panels installed on rooftop
- **Months in Operation:** 12
- **Gross Floor Area:** 450 sqm
- **Rental Cost:** 480,000 SGD

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Calculated Row No.	Required ID No.	Optional Street	Optional Unit No.	Required Building Name	Required City	Required Country
1	UK-KLA3B	345 Kings Way	3B	Kings Lovely Apartments	London	United Kingdom
2	UK-KLA5A	345 Kings Way	5A	Kings Lovely Apartments	London	United Kingdom
3	US-ECH	46 Encino Way		Encino House	Illinois	United States
4	US-HSH0701	Black Wood Rd	07-01	Homestead House	San Diego	United States
5	SG-KVG0204	12 Kovan Street	02-04	Kovan Gardens	Singapore	Singapore
6	SG-KVC	16 Kovan Drive		Kovan Cove	Singapore	Singapore

Required for Australia and Canada Only State/Province	Optional (Required for US Only) Zip/Postal Code	Required Unit Type	Required No. of Bedrooms	Required No. of Bathrooms	Required Kitchen Type	Required Washer/Dryer
		Extended-Stay Hotel / Serviced Apartment / Serviced Accommodation	2	2	Full Kitchen	No
		Extended-Stay Hotel / Serviced Apartment / Serviced Accommodation	1	1	Kitchenette	No
Illinois	60606	Single-family home / Detached house	4	2	Full Kitchen	Yes
California	92101	Apartment / Condominium / Flat	4	3	Full Kitchen	Yes
		Apartment / Condominium / Flat	2	1	Kitchenette	No
		Townhouse / Semi-detached house	4	2	Full Kitchen	Yes

Optional Other Spaces	Optional EV Charging Station	Required Months in Operation	Required Unit Gross Floor Area	Required Unit	Optional Rental Cost	Calculated Currency
Study	No	8.5	240	sqm	163,000.00	United States Dollar (USD)
	No	6.5	75	sqm	39,500.00	United States Dollar (USD)
Garage	Yes	3.0	3,630	sqft	82,030.00	United States Dollar (USD)
Enclosed balcony	No	12.0	3,000	sqft	244,000.00	United States Dollar (USD)
	No	12.0	75	sqm	48,000.00	United States Dollar (USD)
	Yes	12.0	450	sqm	480,000.00	United States Dollar (USD)

### 3 ENERGY CONSUMPTION TAB

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#### 3.1 ENERGY CONSUMPTION OF UNITS

After inputting the units, Jane Doe inputs the energy data for each unit for the selected reporting year, 2024. For each unit, she collects data on the types of energy sources and amount of energy used in 2024, any renewable energy purchases made, as well as any supplier-specific emission factors (EFs) that she would like to use.

Refer to [Appendix A: Inputting Renewable Energy](#) for more details on how to input renewable energy into the Tool, depending on the type of renewable energy and how it was purchased or generated.

##### Property 1 (Kings Lovely Apartments)

- **Energy types and amount used:**
  - Purchased Electricity, 1,990 kWh
  - Natural Gas, 270.50 Therms
- **Renewable energy purchases:** The owner of Kings Lovely Apartments has purchased building-level renewable energy certificates (RECs) of 20 MWh for the whole year of 2024, to offset the carbon emissions of all the apartments in Kings Lovely Apartments, including units 3B and 5A.
- **Supplier-specific EFs:**
  - Default EF is used for Purchased Electricity.
  - Default EF is used for Natural Gas.

##### Property 2 (Kings Lovely Apartments)

- **Energy types and amount used:**
  - Purchased Electricity, 1,025 kWh
  - Natural Gas, 134.50 Therms
- **Renewable energy purchases:** The owner of Kings Lovely Apartments has purchased building-level RECs of 20 MWh for the whole year of 2024, to offset the carbon emissions of all the apartments in Kings Lovely Apartments, including units 3B and 5A.

- **Supplier-specific EFs:**
  - Default EF is used for Purchased Electricity.
  - Default EF is used for Natural Gas.

### Property 3 (Encino House)

- **Energy types and amount used:**
  - Purchased Electricity, 3,840 kWh
  - Propane (Stationary), 302.20 US Gallons
  - Onsite Solar PV Electricity, 960 kWh
- **Renewable energy purchases:** Homely Corporate Housing has purchased RECs to offset the carbon emissions of 50% of the property's Purchased Electricity use every month in 2024.
- **Supplier-specific EFs:**
  - Manual EF for Purchased Electricity of 0.34 kgCO<sub>2e</sub>/kWh is used as provided by the electricity supplier.
  - Default EF is used for Propane (Stationary).

### Property 4 (Homestead House)

- **Energy types and amount used:**
  - Purchased Electricity, 10,580 kWh
  - Propane (Stationary), 891 US Gallons
- **Renewable energy purchases:** The owner of Homestead House has purchased building-level RECs of 12 MWh for the whole year of 2024, to offset the carbon emissions of all the apartments in Homestead House, including unit 07-01.
- **Supplier-specific EFs:**
  - Default EF is used for Purchased Electricity.
  - Default EF is used for Propane (Stationary).

### Property 5 (Kovan Gardens)

- **Energy types and amount used:**
  - Purchased Electricity, 3,025 kWh
  - Town Gas (Singapore), 470.5 kWh
- **Renewable energy purchases:** No renewable energy purchases were made.
- **Supplier-specific EFs:**
  - Manual EF for Purchased Electricity of 0.42 kgCO<sub>2</sub>e/kWh is used as provided by the electricity supplier.
  - Default EF is used for Town Gas (Singapore).

### Property 6 (Kovan Cove)

- **Energy types and amount used:**
  - Purchased Electricity, 13,840 kWh
  - Town Gas (Singapore), 358.8 kWh
  - Onsite Solar PV Electricity, 765 kWh
- **Renewable energy purchases:** No renewable energy purchases were made.
- **Supplier-specific EFs:**
  - Manual EF for Purchased Electricity of 0.42 kgCO<sub>2</sub>e/kWh is used as provided by the electricity supplier.
  - Default EF is used for Town Gas (Singapore).

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Calculated	Required	Required	Required	Required	Optional
Row No.	ID No.	Energy type	Source Unit	Total Amount	REC/EAC of Purchased Electricity %
1	UK-KLA3B	PURCHASED ELECTRICITY	kWh	1,990.00	
2	UK-KLA3B	NATURAL GAS	Therm	270.50	
3	UK-KLA5A	PURCHASED ELECTRICITY	kWh	1,025.00	
4	UK-KLA5A	NATURAL GAS	Therm	134.50	
5	US-ECH	PURCHASED ELECTRICITY	kWh	3,840.00	50%
6	US-ECH	PROPANE (STATIONARY)	US Gal	302.20	
7	US-ECH	ONSITE SOLAR PV ELECTRICITY	kWh	960.00	
8	US-HSH0701	PURCHASED ELECTRICITY	kWh	10,580.00	
9	US-HSH0701	PROPANE (STATIONARY)	US Gal	891.00	
10	SG-KVG0204	PURCHASED ELECTRICITY	kWh	3,025.00	
11	SG-KVG0204	TOWN GAS (SINGAPORE)	kWh	470.50	
12	SG-KVC	PURCHASED ELECTRICITY	kWh	13,840.00	
13	SG-KVC	TOWN GAS (SINGAPORE)	kWh	358.80	
14	SG-KVC	ONSITE SOLAR PV ELECTRICITY	kWh	765.00	

Calculated	Optional	Calculated	Required	Optional	Calculated
Row No.	REC/EAC of Purchased Electricity Amount (kWh)	Unit's share of building-level REC/EAC (kWh)	Default or Manual CO2e Emission Factors (EFs)	Manual EFs (kgCO2e/kWh)	Net Market-based Emissions (kgCO2e)
1			Default		777.15
2			Default		1,450.01
3			Default		400.29
4			Default		720.99
5			Manual	0.34	652.80
6			Default		1,715.49
7			Default		0.00
8			Default		2,396.55
9			Default		5,057.92
10			Manual	0.42	1,270.50
11			Default		75.30
12			Manual	0.42	5,812.80
13			Default		57.42
14			Default		0.00

### 3.2 BUILDING-LEVEL REC OR EAC

The owners of Kings Lovely Apartments in the United Kingdom and Homestead House in the United States have purchased RECs for the apartments in their respective buildings. The purchased RECs will thus need to be proportionately allocated to the three units in Homely Corporate Housing’s portfolio: UK-KLA3B, UK-KLA5A, and US-HSH0701. Jane Doe enters the details of the buildings and the purchased RECs in the *Building-level REC or EAC* tab as follows (building names are automatically populated based on inputs in the *Energy Consumption* tab):

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### Kings Lovely Apartments

- **Building’s Gross Floor Area:** 3,150 sqm
- **Building-level REC/EAC:** 20,000 kWh

### Homestead House

- **Building’s Gross Floor Area:** 18,000 sqft
- **Building-level REC/EAC:** 12,000 kWh

Calculated	Calculated	Optional	Calculated	Optional
Row No.	Building Name	Building’s Gross Floor Area	Unit	Building-level REC/EAC (kWh)
1	Kings Lovely Apartments	3,150	sqm	20,000.00
2	Encino House		sqft	
3	Homestead House	18,000	sqft	12,000.00
4	Kovan Gardens		sqm	
5	Kovan Cove		sqm	

The Tool will automatically calculate Homely Corporate Housing’s units’ share of the purchased RECs. This will be auto-populated in the “Unit’s share of building-level REC/EAC” column and updated in the “Net Market-based Emissions” column of the *Energy Consumption* tab, as shown below.

Calculated	Optional	Calculated	Required	Optional	Calculated
Row No.	REC/EAC of Purchased Electricity Amount (kWh)	Unit’s share of building-level REC/EAC (kWh)	Default or Manual CO2e Emission Factors (EFs)	Manual EFs (kgCO2e/kWh)	Net Market-based Emissions (kgCO2e)
1		1,523.81	Default		182.06
2			Default		1,450.01
3		476.19	Default		214.33
4			Default		720.99
5			Manual	0.34	652.80
6			Default		1,715.49
7			Default		0.00
8		2,000.00	Default		1,943.52
9			Default		5,057.92
10			Manual	0.42	1,270.50
11			Default		75.30
12			Manual	0.42	5,812.80
13			Default		57.42
14			Default		0.00

## 4 REPORTS TABS

### 4.1 BUYER REPORT

Jane Doe has been asked to generate a buyer report for a client, Best Buyer Inc., that has rented three units for a period of time in 2024. She gathers the details of Best Buyer Inc.'s rental and enters them into the *Buyer Report Input* tab.

Below are the details of Best Buyer Inc.'s rental:

- **UK-KLA3B:** Rented for 4 months (122 days) in 2024.
- **UK-KLA5A:** Rented for 6 months (183 days) in 2024.
- **SG-KVC:** Rented for 12 months (366 days) in 2024.

Calculated Row No.	Calculated ID No.	Required Included/Excluded	Required No. of nights	Required Rental cost	Calculated Currency
1	UK-KLA3B	Included	122		United States Dollar (USD)
2	UK-KLA5A	Included	182		United States Dollar (USD)
3	US-ECH	Excluded			United States Dollar (USD)
4	US-HSH0701	Excluded			United States Dollar (USD)
5	SG-KVG0204	Excluded			United States Dollar (USD)
6	SG-KVC	Included	366		United States Dollar (USD)


The carbon footprint calculations for Best Buyer Inc.'s rental will be reflected automatically in the *Buyer Report Output* tab, as shown in the screenshot below.

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 <b>CHPA Carbon Calculation Tool 1.0</b> <i>Buyer Report</i>	<b>Key</b>	
		To be manually completed
		Automatically calculated/Not applicable

BUYER DETAILS	
Name of Buyer	<b>Best Buyer Inc.</b>
Reporting Period <i>The 12-month period used for calculations.</i>	<b>Jan 2024 - Dec 2024</b>

CARBON FOOTPRINT (MARKET-BASED EMISSIONS)		
Total Carbon Footprint	<b>7,621.57</b>	<b>kgCO<sub>2</sub>e</b>
Buyer Emissions Contribution / Buyer Emissions Share <i>As a % of your agent's/operator's total emissions for all managed units.</i>	<b>39.79</b>	<b>%</b>

This buyer report includes the following unit(s):  
 UK-KLA3B, UK-KLA5A, SG-KVC

\* Market-based emissions represent emissions based on your energy purchasing decisions by considering market purchases of Renewable Energy Certificates (RECs) and Energy Attribute Certificates (EACs), and energy supplier-specific emissions where available.

### 4.2 CATEGORIZED RESULTS

As the Sustainability Team lead, Jane Doe is required to report to the leadership team of Homely Corporate Housing on the carbon footprint performance of its units. For reporting year 2023, Homely Corporate Housing has requested the following information:

- Total Emissions per sqm of all units
- Total Emissions of all apartments
- Total Emissions per sqm of all apartments
- Total Emissions per Night of all units with in-unit washer/dryer
- Total Emissions per Night of all units without in-unit washer/dryer

To retrieve the requested information, Jane Doe makes the selections in the *Categorized Results* tab as shown in the following pages.

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- Total Emissions per sqm of all units: **17.43 kgCO<sub>2</sub>e**
  - No selections were made under “Unit Configuration Filters” to output metrics covering all units.

**CHPA Carbon Calculation Tool**  
Categorized Results

Key	
	Select from dropdown
	Automatically calculated/Not applicable

**Introduction**

Categorized results represent the average market-based emissions and intensities for the unit configurations. This may be useful for trying to calculate the average metric across units with the same configuration. Market-based emissions represent emissions based on your energy purchasing decisions by considering market purchases of Renewable Energy Certificates (RECs) and Energy Attribute Certificates (EACs), and energy supplier-specific

**Unit Configuration Filters**

All unit configurations are optional. Select configurations to filter results for matching units. Unselected configurations will include units with any status. For example, if 'Kitchen Type' and 'EV charging station' are not selected, results will include any kitchen type ('Full Kitchen,' 'Kitchenette,' or 'No Kitchen') and any EV charging status ('yes,' 'no,' or blank), along with other selected configurations. Remove selection(s) to reset and show results for all units.

Unit Type	
No. of Bedrooms	
No. of Bathrooms	
Kitchen Type	
Washer/Dryer	
EV Charging Station	

**Reporting Period**

The 12-month period as selected in 'Unit Details' tab.

Reporting Year	Jan 2024 - Dec 2024
----------------	---------------------

**Results**

Results represent the average market-based emissions and intensities for the unit configuration. Please ensure Unit Details in the 'Unit Details' tab are complete to output the results.

Number of units used to calculate coefficients	Total Market-based Emissions (kgCO <sub>2</sub> e)	Total Emissions per sqft (kgCO <sub>2</sub> e/sqft)	Total Emissions per sqm (kgCO <sub>2</sub> e/sqm)	Total Emissions per Bedroom (kgCO <sub>2</sub> e/Bedroom)	Total Emissions per Night (kgCO <sub>2</sub> e/Night)	Total Emissions per \$ (kgCO <sub>2</sub> e/\$)
6	19,153.13	1.62	17.43	1,126.65	11.86	0.02

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- Total Emissions of all apartments: **8,347.23 kgCO<sub>2</sub>e**
  - Unit Type: “Apartment / Condominium / Flat” selected to output metrics covering all apartment units.
- Total Emissions per sqm of all apartments: **23.60 kgCO<sub>2</sub>e**
  - Unit Type: “Apartment / Condominium / Flat” selected to output metrics covering all apartment units.

**CHPA Carbon Calculation Tool**  
*Categorized Results*

Key	
	Select from dropdown
	Automatically calculated/Not applicable

**Introduction**

*Categorized results represent the average market-based emissions and intensities for the unit configurations. This may be useful for trying to calculate the average metric across units with the same configuration. Market-based emissions represent emissions based on your energy purchasing decisions by considering market purchases of Renewable Energy Certificates (RECs) and Energy Attribute Certificates (EACs), and energy supplier-specific*

**Unit Configuration Filters**

*All unit configurations are optional. Select configurations to filter results for matching units. Unselected configurations will include units with any status. For example, if 'Kitchen Type' and 'EV charging station' are not selected, results will include any kitchen type ('Full Kitchen,' 'Kitchenette,' or 'No Kitchen') and any EV charging status ('yes,' 'no,' or 'blank'), along with other selected configurations. Remove selection(s) to reset and show results for all units.*

Unit Type	Apartment / Condominium / Flat
No. of Bedrooms	
No. of Bathrooms	
Kitchen Type	
Washer/Dryer	
EV Charging Station	

**Reporting Period**

*The 12-month period as selected in 'Unit Details' tab.*

Reporting Year	Jan 2024 - Dec 2024
----------------	---------------------

**Results**

*Results represent the average market-based emissions and intensities for the unit configuration. Please ensure Unit Details in the 'Unit Details' tab are complete to output the results.*

Number of units used to calculate coefficients	Total Market-based Emissions (kgCO <sub>2</sub> e)	Total Emissions per sqft (kgCO <sub>2</sub> e/sqft)	Total Emissions per sqm (kgCO <sub>2</sub> e/sqm)	Total Emissions per Bedroom (kgCO <sub>2</sub> e/Bedroom)	Total Emissions per Night (kgCO <sub>2</sub> e/Night)	Total Emissions per \$ (kgCO <sub>2</sub> e/\$)
2	8,347.23	2.19	23.60	1,391.21	11.40	0.03

# CHPA Carbon Calculation Tool

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- Total Emissions per Night of all units with in-unit washer/dryer: **18.52 kgCO<sub>2</sub>e**
  - Washer/Dryer: “Yes” selected to output metrics covering all units with washer/dryer.

**CHPA Carbon Calculation Tool**  
Categorized Results

Key	
	Select from dropdown
	Automatically calculated/Not applicable

**Introduction**

Categorized results represent the average market-based emissions and intensities for the unit configurations. This may be useful for trying to calculate the average metric across units with the same configuration. Market-based emissions represent emissions based on your energy purchasing decisions by considering market purchases of Renewable Energy Certificates (RECs) and Energy Attribute Certificates (EACs), and energy supplier-specific

**Unit Configuration Filters**

All unit configurations are optional. Select configurations to filter results for matching units. Unselected configurations will include units with any status. For example, if 'Kitchen Type' and 'EV charging station' are not selected, results will include any kitchen type ('Full Kitchen,' 'Kitchenette,' or 'No Kitchen') and any EV charging status ('yes,' 'no,' or blank), along with other selected configurations. Remove selection(s) to reset and show results for all units.

Unit Type	
No. of Bedrooms	
No. of Bathrooms	
Kitchen Type	
Washer/Dryer	Yes
EV Charging Station	

**Reporting Period**

The 12-month period as selected in 'Unit Details' tab.

Reporting Year	Jan 2024 - Dec 2024
----------------	---------------------

**Results**

Results represent the average market-based emissions and intensities for the unit configuration. Please ensure Unit Details in the 'Unit Details' tab are complete to output the results.

Number of units used to calculate coefficients	Total Market-based Emissions (kgCO <sub>2</sub> e)	Total Emissions per sqft (kgCO <sub>2</sub> e/sqft)	Total Emissions per sqm (kgCO <sub>2</sub> e/sqm)	Total Emissions per Bedroom (kgCO <sub>2</sub> e/Bedroom)	Total Emissions per Night (kgCO <sub>2</sub> e/Night)	Total Emissions per \$ (kgCO <sub>2</sub> e/\$)
3	15,239.95	1.74	18.74	1,270.00	18.52	0.02

# CHPA Carbon Calculation Tool

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- Total Emissions per Night of all units without in-unit washer/dryer: **4.94 kgCO<sub>2</sub>e**
  - Washer/Dryer: “No” selected to output metrics covering all units with washer/dryer.

**CHPA Carbon Calculation Tool**  
Categorized Results

Key	
	Select from dropdown
	Automatically calculated/Not applicable

**Introduction**

Categorized results represent the average market-based emissions and intensities for the unit configurations. This may be useful for trying to calculate the average metric across units with the same configuration. Market-based emissions represent emissions based on your energy purchasing decisions by considering market purchases of Renewable Energy Certificates (RECs) and Energy Attribute Certificates (EACs), and energy supplier-specific

**Unit Configuration Filters**

All unit configurations are optional. Select configurations to filter results for matching units. Unselected configurations will include units with any status. For example, if 'Kitchen Type' and 'EV charging station' are not selected, results will include any kitchen type ('Full Kitchen,' 'Kitchenette,' or 'No Kitchen') and any EV charging status ('yes,' 'no,' or 'blank'), along with other selected configurations. Remove selection(s) to reset and show results for all units.

Unit Type	
No. of Bedrooms	
No. of Bathrooms	
Kitchen Type	
Washer/Dryer	No
EV Charging Station	

**Reporting Period**

The 12-month period as selected in 'Unit Details' tab.

Reporting Year	Jan 2024 - Dec 2024
----------------	---------------------

**Results**

Results represent the average market-based emissions and intensities for the unit configuration. Please ensure Unit Details in the 'Unit Details' tab are complete to output the results.

Number of units used to calculate coefficients	Total Market-based Emissions (kgCO <sub>2</sub> e)	Total Emissions per sqft (kgCO <sub>2</sub> e/sqft)	Total Emissions per sqm (kgCO <sub>2</sub> e/sqm)	Total Emissions per Bedroom (kgCO <sub>2</sub> e/Bedroom)	Total Emissions per Night (kgCO <sub>2</sub> e/Night)	Total Emissions per \$ (kgCO <sub>2</sub> e/\$)
3	3,913.18	1.27	13.70	782.64	4.94	0.02

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### 4.3 INVENTORY TAB

Finally, Jane Doe is also required to prepare an annual inventory of the energy and carbon footprint performance of all units globally, to be sent to the leadership team of Homely Corporate Housing. She is able to easily retrieve the information from the *Inventory* tab.

**CHPA Carbon Calculation Tool**

*Inventory*

Key	
	Automatically calculated/Not applicable
	Unit Details
	Energy and Emissions Metrics

**Introduction**

*The inventory provides an overview of annual energy consumption and market-based emissions in the calendar year for all units.*

*Market-based emissions represent emissions based on your energy purchasing decisions by considering market purchases of Renewable Energy Certificates (RECs) and Energy Attribute Certificates (EACs), and energy supplier-specific.*

**Results will only appear if the Reporting Period in the 'Unit Details' tab is a calendar year (e.g. Jan 2024 - Dec 2024).**

**Reporting Period**

*The 12-month period as selected in 'Unit Details' tab if it is a calendar year, otherwise it is stated as "Not Applicable".*

Calendar Year	2024
---------------	------

**Results**

*Calculated energy, emissions and intensities for all units.*

*Please ensure Unit Details in the 'Unit Details' tab are complete to output the results.*

Row No.	ID No.	Unit Type	No. of Bedrooms	No. of Bathrooms	Kitchen Type	Washer/Dryer
<b>GRAND TOTAL</b>						
1	US-HSH0701	<i>Apartment / Condominium / Flat</i>	4	3	<i>Full Kitchen</i>	<i>Yes</i>
2	UK-KLA3B	<i>Extended-Stay Hotel / Serviced Apartment / Serviced Accommodation</i>	2	2	<i>Full Kitchen</i>	<i>No</i>
3	UK-KLA5A	<i>Extended-Stay Hotel / Serviced Apartment / Serviced Accommodation</i>	1	1	<i>Kitchenette</i>	<i>No</i>
4	US-ECH	<i>Single-family home / Detached house</i>	4	2	<i>Full Kitchen</i>	<i>Yes</i>
5	SG-KVG0204	<i>Apartment / Condominium / Flat</i>	2	1	<i>Kitchenette</i>	<i>No</i>
6	SG-KVC	<i>Townhouse / Semi-detached house</i>	4	2	<i>Full Kitchen</i>	<i>Yes</i>

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Other Spaces	EV Charging Station	Direct Energy (kWh)	Indirect Energy (kWh)	Total Energy (kWh)	Scope 1 Emissions (kgCO2e)	Scope 2 Market-based Emissions (kgCO2e)	Total Market-based Emissions (kgCO2e)
		<b>46,597.21</b>	<b>34,300.00</b>	<b>80,897.21</b>	<b>9,077.13</b>	<b>10,076.00</b>	<b>19,153.13</b>
<i>Enclosed balcony</i>	No	24,024.62	10,580.00	34,604.62	5,057.92	1,943.52	7,001.44
<i>Study</i>	No	7,927.90	1,990.00	9,917.90	1,450.01	182.06	1,632.07
	No	3,941.97	1,025.00	4,966.97	720.99	214.33	935.31
<i>Garage</i>	Yes	9,108.42	3,840.00	12,948.42	1,715.49	652.80	2,368.29
	No	470.50	3,025.00	3,495.50	75.30	1,270.50	1,345.80
	Yes	1,123.80	13,840.00	14,963.80	57.42	5,812.80	5,870.22

Total Emissions per sqft (kgCO2e/sqft)	Total Emissions per sqm (kgCO2e/sqm)	Total Emissions per Bedroom (kgCO2e/Bedroom)	Total Emissions per Night (kgCO2e/Night)	Total Emissions per \$ (kgCO2e/\$)
<b>1.62</b>	<b>17.43</b>	<b>1,126.65</b>	<b>11.86</b>	<b>0.02</b>
2.33	25.12	1,750.36	19.13	0.03
0.89	9.60	816.04	6.69	0.01
2.14	23.02	935.31	5.14	0.02
2.61	28.09	592.07	26.03	0.03
1.67	17.94	672.90	3.68	0.03
1.21	13.04	1,467.56	16.04	0.01

## 5 APPENDICES

### A INPUTTING RENEWABLE ENERGY

There are many ways for users to input renewable energy into the Tool, depending on the type of renewable energy and how it was purchased or generated.

Type	Definition	Inputting into the Tool
<b>Onsite Renewable Energy</b>	Refers to renewable energy that is generated by renewable energy technologies installed on the site of the unit or building, such as solar panels or wind turbines. It <u>is directly consumed</u> by the unit.	<p>Enter the renewable energy consumed in a separate row as <u>its own energy type</u>.</p> <p>Select the energy type as “<b>Onsite Geothermal Energy</b>”, “<b>Onsite Solar PV Electricity</b>”, “<b>Onsite Solar Thermal</b>”, “<b>Onsite Wind Power Electricity</b>”, or “<b>Other Onsite Renewable Energy</b>”.</p> <p>See Worked Example Section 3.1.</p>
<b>Power Purchase Agreement (PPA)</b>	<p>Refers to long-term renewable energy contracts between an electricity producer and a customer, which would allow the customer to receive renewable electricity at an agreed quantity and a stable price. The purchased renewable energy <u>is directly consumed</u> by the unit for which it is purchased.</p> <p>There are three main types of PPA:</p> <ul style="list-style-type: none"> <li>• <b>Physical PPA:</b> The customer purchases electricity physically delivered from a renewable energy system operated by the developer, who assumes ownership and operational risks.</li> <li>• <b>Virtual or financial PPA:</b> The customer pays or receives the net price difference between the fixed and wholesale price for grid-sold electricity, along with environmental attributes via Energy Attribute Certificates (EACs).</li> <li>• <b>Sleeve PPA:</b> An intermediary utility company manages energy and payments between the customer and the</li> </ul>	<p>Enter the renewable energy consumed in a separate row as <u>its own energy type</u>.</p> <p>Select the energy type as “<b>Purchased Renewable Energy</b>”.</p>

	<p>renewable energy project, shielding the hotel from wholesale market risks.</p>	
<p><b>Renewable Energy Certificate (REC) or Energy Attribute Certificate (EAC)</b></p>	<p>Energy Attribute Certificates (EAC), commonly referred to as Renewable Energy Certificates (REC) in North America, are a form of <u>market purchase</u>. They are used as proof that the energy consumed from a shared energy grid is generated by a renewable source, such as solar or wind.</p> <p>The purchased renewable energy is <u>not consumed</u> by the unit, but the associated carbon emissions saved can be attributed to the unit for which it is purchased.</p> <p>There are two types of EACs:</p> <ul style="list-style-type: none"> <li>• Bundled EACs: EACs that are sold together with their associated energy from the grid.</li> <li>• Unbundled EACs: EACs that are sold separately from the electricity grid.</li> </ul>	<p>Enter the REC/EAC amount purchased, either in % of Purchased Electricity or in absolute amount, in the <i>Energy Consumption</i> tab.</p> <p>See Worked Example Section 3.1.</p>

### B LIST OF ENERGY TYPES

Below is a list of energy type options available for selection in the CHPA Tool, specifically displayed in the Energy Consumption tab (Energy Type column).

No.	Type	Description
1	Bio-Diesel (Mobile)	Biodiesel oil used as a mobile fuel for property vehicles (not for building)
2	Bio-Diesel (Stationary)	Biodiesel oil used as a stationary fuel for the building only (not for property vehicles)
3	Bioethanol	Bioethanol is a renewable fuel derived from common crops (such as sugar cane and sugar beet).
4	Biofuel - Vegetable Oil (Mobile)	Biofuel made from vegetable oil, either fresh or recycled. This transportation fuel is usually blended with petroleum fuels (gasoline and diesel fuel), but they can also be used directly.
5	Biofuel - Vegetable Oil (Stationary)	Biofuel made from vegetable oil, which can be recycled vegetable oil or fresh vegetable oil. It is usually meant for stationary use on the premise.
6	Biofuel Landfill Gas (50/50)	Landfill gas (LFG) is a natural by-product from the decomposition of organic material in landfills. LFG is composed of roughly 50 percent methane (the primary component of natural gas), 50 percent carbon dioxide (CO <sub>2</sub> ) and a small amount of non-methane organic compounds.
7	Biofuel Used Oil	Biofuel made from any form of used oil
8	Biofuel Wood Waste	Biofuel with wood waste and/or sawdust as the feedstock.
9	Biogas (Captured Methane)	Methane originating from waste crop material/food waste through anaerobic digestion or bacteria.
10	Biomass	Biomass refers to organic material that comes from plants and animals. Energy is released when biomass is burned directly or converted to liquid biofuels or biogas before getting burned as fuels. Examples of biomass can include food, yard and wood waste.
11	Butane	A gaseous fuel derived from petroleum. It is used primarily for camping, backyard cooking and in cigarette lighters.
12	Charcoal	A dark or black porous solid form of carbon that results from heating wood or other organic matter in absence of air. It is usually used for BBQ grills.
13	Coal Gas	A gas used for illuminating and heating, produced by distilling bituminous coal and consisting mainly of hydrogen, methane, and carbon monoxide.
14	Compressed Natural Gas (CNG) (Mobile)	Compressed natural gas (CNG) is a form of natural gas currently used in vehicles. CNG is produced by compressing natural gas to less than 1 percent

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		of its volume at standard atmospheric pressure. It is used in light-, medium-, and heavy-duty applications.
15	Compressed Natural Gas (CNG) (Stationary)	CNG refers to compressed natural gas, which is made of methane gas stored at high pressure. It is usually stored in fuel storage cylinders. It can be used in place of gasoline, diesel fuel and liquefied petroleum gas.
16	Diesel (Mobile)	A type of heavy oil that is refined from crude oil and used as fuel. Diesel fuel is a combination of primarily C10 to C19 hydrocarbon molecules.
17	Diesel (Stationary)	A type of heavy oil that is refined from crude oil and used as fuel. Diesel fuel is a combination of primarily C10 to C19 hydrocarbon molecules. As a stationary power source, it is commonly used by backup generator sets and boilers within the premise.
18	Ethanol	Ethanol is a clear, colorless liquid. It is also known as C <sub>2</sub> H <sub>5</sub> OH, ethyl alcohol, grain alcohol, and EtOH. It is mainly used as a biofuel additive for gasoline. Ethanol is commonly made from biomass such as corn or sugarcane.
19	Fuel Oil #1	Fuel Oil 1 is a light distillate fuel oil that has distillation temperatures of 400 degrees Fahrenheit at the 10-percent recovery point and 550 degrees Fahrenheit at the 90-percent point. It is used primarily as fuel for portable outdoor stoves and portable outdoor heaters.
20	Fuel Oil #2	Fuel Oil 2 is traditionally used in heating buildings and is chemically similar to diesel fuel. It is stained with a reddish dye. It has a distillation temperatures of 400 degrees Fahrenheit at the 10-percent recovery point and 640 degrees Fahrenheit at the 90-percent recovery point.
21	Fuel Oil #4	Fuel Oil 4 is a distillate fuel oil made by blending distillate fuel oil and residual fuel oil stocks. It is used extensively in industrial plants and in commercial burner installations that are not equipped with preheating facilities.
22	Fuel Oil #5	Fuel Oil 5 is a residual fuel oil of medium viscosity and used in steam-powered vessels. It is a heavier oil compared to Fuel Oil 1-4.
23	Fuel Oil #6	Fuel Oil 6 includes Bunker C fuel oil and is used for the production of electric power, space heating, vessel bunkering, and various industrial purposes. It is a heavier oil compared to Fuel Oil 1-5.
24	Gasoline (Mobile)	A volatile flammable liquid hydrocarbon mixture used as a fuel especially for internal combustion engines.
25	Gasoline (Stationary)	A volatile flammable liquid hydrocarbon mixture used as a fuel especially for internal combustion engines or stationary steam engines, and usually blended from several products of natural gas and petroleum. These engines are immobile.
26	Gasoline Biofuel Blend (Mobile)	Ethanol is a biofuel made from various plant materials collectively known as biomass. It blends with gasoline and typically forming E10 (10% ethanol, 90% gasoline). Ethanol is also available as E85 (or flex fuel), which can be used in

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		flexible fuel vehicles, designed to operate on any blend of gasoline and ethanol up to 83%.
27	Kerosene	Kerosene, also known as paraffin, lamp oil, and coal oil (an obsolete term), is a combustible hydrocarbon liquid which is derived from petroleum through fractional distillation. It has a strong smell.
28	Liquefied Natural Gas (LNG) (Mobile)	Liquefied natural gas (LNG) is natural gas that has been cooled to a liquid state, at about -260 degree Fahrenheit, for shipping and storage. The volume of natural gas in its liquid state is about 600 times smaller than its volume in its gaseous state. It is most commonly used to generate power in natural gas-fired power plants. It comprises of mainly methane. Once LNG is regasified, it can be used for heating, cooking and drying clothes, and can also be used to power vehicles, usually trucks that travel longer ranges.
29	Liquefied Natural Gas (LNG) (Stationary)	Liquefied natural gas (LNG) is natural gas that has been cooled to a liquid state, at about -260 degree Fahrenheit, for shipping and storage. The volume of natural gas in its liquid state is about 600 times smaller than its volume in its gaseous state. It is most commonly used to generate power in natural gas-fired power plants. It comprises of mainly methane. Once LNG is regasified, it can be used for heating, cooking and drying clothes, and can also be used to power vehicles, usually trucks that travel longer ranges.
30	Liquefied Petroleum Gas (LPG) (Mobile)	Liquefied petroleum gas (LPG) consists of propane and butane. LPG is either produced during the oil refining process or extracted during natural gas production process. It is a flammable mixture of hydrocarbon gases and is used as fuel in heating appliances, cooking equipment, and vehicles.
31	Liquefied Petroleum Gas (LPG) (Stationary)	Liquefied petroleum gas (LPG) consists of propane and butane. LPG is either produced during the oil refining process or extracted during natural gas production process. It is a flammable mixture of hydrocarbon gases and is used as fuel in heating appliances, cooking equipment, and vehicles.
32	Natural Gas	Natural gas is an odorless, gaseous mixture of hydrocarbons — predominantly made up of methane (CH <sub>4</sub> ). About 40 percent of the fuel goes to electric power production and the remaining is split between residential and commercial uses, such as heating and cooking, and industrial uses.
33	Onsite Geothermal Energy	Geothermal energy is the heat energy generated from deep within Earth's core. It is a clean, renewable resource that can be harnessed for use as heat and converted into electricity.
34	Onsite Solar PV Electricity	Solar Photovoltaic (PV) systems convert sunlight (solar energy) into direct current electricity through the use of semiconductors. When sunlight hits the semiconductor within the PV cell, electrons are freed and form an electric current. This is a form of renewable energy. For onsite installations, it is usually in the form of a panel and mounted on the rooftop. Solar water heating, which is the conversion of sunlight into heat for water heating using a solar thermal collector, is also included in this category.

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35	Onsite Solar Thermal	Solar thermal power/electric generation systems collect and concentrate sunlight to produce the high temperature heat needed to generate electricity. All solar thermal power systems have solar energy collectors with two main components: reflectors (mirrors) that capture and focus sunlight onto a receiver. In most types of systems, a heat-transfer fluid is heated and circulated in the receiver and used to produce steam. The steam is converted into mechanical energy in a turbine, which powers a generator to produce electricity.
36	Onsite Wind Power Electricity	Wind power electricity is a renewable energy. Wind energy turns the propeller-like blades of a turbine around a rotor, which then spins a generator to create electricity. It can be onsite or offsite.
37	Other Onsite Renewable Energy	Any other renewable energy.
38	Propane (Mobile)	Propane is a three-carbon alkane with the molecular formula C <sub>3</sub> H <sub>8</sub> . It is a gas at standard temperature and pressure, but compressible to a transportable liquid. A by-product of natural gas processing and petroleum refining, it is commonly used as a fuel. It is non-toxic, colorless, and virtually odorless; an identifying odor is added so it can be detected. Propane is commonly used for space and water heating, for cooking, and as fuel for engine applications such as forklifts, farm irrigation engines and fleet vehicles.
39	Propane (Stationary)	Propane is a three-carbon alkane with the molecular formula C <sub>3</sub> H <sub>8</sub> . It is a gas at standard temperature and pressure, but compressible to a transportable liquid. A by-product of natural gas processing and petroleum refining, it is commonly used as a fuel. It is non-toxic, colorless, and virtually odorless; an identifying odor is added so it can be detected. Propane is commonly used for space and water heating, for cooking, and as fuel for engine applications such as forklifts, farm irrigation engines and fleet vehicles.
40	Purchased Chilled Water	Chilled water purchased from the district cooling system, which is a network of underground pipes for use in space and process cooling. By purchasing chilled water, individual buildings do not have to install their own chiller plants. Values should be in energy values, not water volume.
41	Purchased Electricity	Electricity purchased from a utility company
42	Purchased Heat	Heat that is purchased from utilities or municipal sources. If it is generated onsite through combustion or other energy sources, this does not need to be entered. Values should be in energy values.
43	Purchased Hot Water	Hot water that is purchased from utilities or municipal sources for heating purposes only (not for the water content). If it is generated onsite, this does not need to be entered. Values should be in energy values, not water volume.

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44	Purchased Renewable Energy	Any other purchased renewable energy, for example purchased via virtual PPA.
45	Purchased Steam	Steam that is purchased from utilities or municipal sources. If it is generated onsite through combustion or other energy sources, this does not need to be entered. Values should be in energy values, not water volume.
46	Town Gas (Hong Kong)	Town gas that is produced and supplied to Hong Kong, SAR. It is composed of mainly natural gas (61%), naphtha (38%) and landfill gas (1%). A special odour has been added to town gas so that it can be detected easily.
47	Town Gas (Singapore)	Town gas that is produced and supplied to Singapore. It is composed predominantly of hydrogen, methane, and carbon dioxide.
48	Town Gas (Tokyo)	Town gas that is produced and supplied to Tokyo and surrounding areas in Japan. It is composed predominantly of liquefied natural gas and a small portion of liquefied petroleum gas.
49	Towngas / Citygas	Gas supplied for properties within a district supply of blended gas.

### C LIST OF COUNTRIES WITHOUT PURCHASED ELECTRICITY AND PURCHASED CHILLED WATER EF

The table below provides the list of countries without default emission factors (EFs) for purchased electricity and purchased chilled water. The emission factors are not available due to licensing restrictions. To calculate emissions associated with these energy types for these countries, please provide your manual (e.g. supplier-specific) emission factor in the CHPA Tool, specifically the Energy Consumption tab (Manual EFs column). Note that default emission factors for purchased electricity and purchased chilled water are not available from 2023 onwards, unless otherwise stated.

No.	Country
1	Afghanistan
2	Aland Islands
3	Albania
4	Algeria
5	Andorra
6	Angola
7	Anguilla
8	Antarctica
9	Antigua and Barbuda
10	Argentina
11	Armenia
12	Aruba
13	Austria
14	Azerbaijan
15	Bahamas
16	Bahrain
17	Bangladesh
18	Barbados
19	Belarus
20	Belgium
21	Belize
22	Benin
23	Bermuda

<b>24</b>	Bhutan
<b>25</b>	Bolivia
<b>26</b>	Bonaire
<b>27</b>	Bosnia and Herzegovina
<b>28</b>	Botswana
<b>29</b>	Bouvet Island
<b>30</b>	Brazil
<b>31</b>	British Indian Ocean Territory
<b>32</b>	Brunei Darussalam
<b>33</b>	Bulgaria
<b>34</b>	Burkina Faso
<b>35</b>	Burundi
<b>36</b>	Cambodia
<b>37</b>	Cameroon
<b>38</b>	Cape Verde
<b>39</b>	Cayman Islands
<b>40</b>	Central African Republic
<b>41</b>	Chad
<b>42</b>	Chile
<b>43</b>	China
<b>44</b>	Christmas Island
<b>45</b>	Cocos (Keeling) Islands
<b>46</b>	Colombia
<b>47</b>	Comoros
<b>48</b>	Congo
<b>49</b>	Cook Islands
<b>50</b>	Costa Rica
<b>51</b>	Croatia
<b>52</b>	Cuba
<b>53</b>	Curacao

<b>54</b>	Cyprus
<b>55</b>	Czech Republic
<b>56</b>	Côte d'Ivoire
<b>57</b>	Democratic Republic of the Congo
<b>58</b>	Denmark
<b>59</b>	Djibouti
<b>60</b>	Dominica
<b>61</b>	Dominican Republic
<b>62</b>	Ecuador
<b>63</b>	Egypt
<b>64</b>	El Salvador
<b>65</b>	Equatorial Guinea
<b>66</b>	Eritrea
<b>67</b>	Estonia
<b>68</b>	Eswatini
<b>69</b>	Ethiopia
<b>70</b>	FYR of Macedonia
<b>71</b>	Falkland Islands (Malvinas)
<b>72</b>	Faroe Islands
<b>73</b>	Fiji
<b>74</b>	Finland
<b>75</b>	France
<b>76</b>	French Guiana
<b>77</b>	French Polynesia
<b>78</b>	French Southern Territories
<b>79</b>	Gabon
<b>80</b>	Gambia
<b>81</b>	Georgia
<b>82</b>	Germany
<b>83</b>	Ghana

<b>84</b>	Gibraltar
<b>85</b>	Greece
<b>86</b>	Greenland
<b>87</b>	Grenada
<b>88</b>	Guadeloupe
<b>89</b>	Guatemala
<b>90</b>	Guernsey
<b>91</b>	Guinea
<b>92</b>	Guinea-Bissau
<b>93</b>	Guyana
<b>94</b>	Haiti
<b>95</b>	Heard and Mcdonald Islands
<b>96</b>	Holy See (Vatican City State)
<b>97</b>	Honduras
<b>98</b>	Hong Kong, China
<b>99</b>	Hungary
<b>100</b>	Iceland
<b>101</b>	India
<b>102</b>	Indonesia
<b>103</b>	Iraq
<b>104</b>	Ireland
<b>105</b>	Islamic Republic of Iran
<b>106</b>	Isle of Man
<b>107</b>	Israel
<b>108</b>	Italy
<b>109</b>	Jamaica
<b>110</b>	Japan
<b>111</b>	Jersey
<b>112</b>	Jordan
<b>113</b>	Kazakhstan

<b>114</b>	Kenya
<b>115</b>	Kiribati
<b>116</b>	Korea
<b>117</b>	Kosovo
<b>118</b>	Kuwait
<b>119</b>	Kyrgyzstan
<b>120</b>	Lao P.D.R.
<b>121</b>	Latvia
<b>122</b>	Lebanon
<b>123</b>	Lesotho
<b>124</b>	Liberia
<b>125</b>	Libya
<b>126</b>	Liechtenstein
<b>127</b>	Lithuania
<b>128</b>	Luxembourg
<b>129</b>	Macau, China
<b>130</b>	Madagascar
<b>131</b>	Malawi
<b>132</b>	Malaysia
<b>133</b>	Maldives
<b>134</b>	Mali
<b>135</b>	Malta
<b>136</b>	Marshall Islands
<b>137</b>	Martinique
<b>138</b>	Mauritania
<b>139</b>	Mauritius
<b>140</b>	Mayotte
<b>141</b>	Micronesia
<b>142</b>	Monaco
<b>143</b>	Mongolia

<b>144</b>	Montenegro
<b>145</b>	Montserrat
<b>146</b>	Morocco
<b>147</b>	Mozambique
<b>148</b>	Myanmar
<b>149</b>	Namibia
<b>150</b>	Nauru
<b>151</b>	Nepal
<b>152</b>	Netherlands
<b>153</b>	Netherlands Antilles
<b>154</b>	New Caledonia
<b>155</b>	Nicaragua
<b>156</b>	Niger
<b>157</b>	Nigeria
<b>158</b>	Niue
<b>159</b>	Norfolk Islands
<b>160</b>	North Korea
<b>161</b>	Norway
<b>162</b>	Oman
<b>163</b>	Pakistan
<b>164</b>	Palau
<b>165</b>	Palestinian Territory
<b>166</b>	Panama
<b>167</b>	Papua New Guinea
<b>168</b>	Paraguay
<b>169</b>	Peru
<b>170</b>	Philippines
<b>171</b>	Pitcairn
<b>172</b>	Poland
<b>173</b>	Portugal

<b>174</b>	Qatar
<b>175</b>	Republic of Moldova
<b>176</b>	Reunion
<b>177</b>	Romania
<b>178</b>	Russian Federation
<b>179</b>	Rwanda
<b>180</b>	Saba
<b>181</b>	Saint Helena
<b>182</b>	Saint Kitts and Nevis
<b>183</b>	Saint Lucia
<b>184</b>	Saint Martin
<b>185</b>	Saint Pierre and Miquelon
<b>186</b>	Saint Vincent and the Grenadines
<b>187</b>	Saint-Barthelemy
<b>188</b>	Samoa
<b>189</b>	San Marino
<b>190</b>	Sao Tome and Principe
<b>191</b>	Saudi Arabia
<b>192</b>	Senegal
<b>193</b>	Serbia
<b>194</b>	Seychelles
<b>195</b>	Sierra Leone
<b>196</b>	Singapore
<b>197</b>	Sint Eustatius
<b>198</b>	Sint Maarten
<b>199</b>	Slovak Republic
<b>200</b>	Slovenia
<b>201</b>	Solomon Islands
<b>202</b>	Somalia
<b>203</b>	South Africa

<b>204</b>	South Georgia and the South Sandwich Islands
<b>205</b>	South Sudan
<b>206</b>	Spain
<b>207</b>	Sri Lanka
<b>208</b>	Sudan
<b>209</b>	Suriname
<b>210</b>	Svalbard and Jan Mayen Islands
<b>211</b>	Sweden
<b>212</b>	Switzerland
<b>213</b>	Syrian Arab Republic
<b>214</b>	Tajikistan
<b>215</b>	Tanzania
<b>216</b>	Thailand
<b>217</b>	Timor-Leste
<b>218</b>	Togo
<b>219</b>	Tokelau
<b>220</b>	Tonga
<b>221</b>	Trinidad and Tobago
<b>222</b>	Tunisia
<b>223</b>	Turkey
<b>224</b>	Turkmenistan
<b>225</b>	Turks and Caicos Islands
<b>226</b>	Tuvalu
<b>227</b>	US Minor Outlying Islands
<b>228</b>	Uganda
<b>229</b>	Ukraine
<b>230</b>	United Arab Emirates
<b>231</b>	Uruguay
<b>232</b>	Uzbekistan
<b>233</b>	Vanuatu

<b>234</b>	Venezuela
<b>235</b>	Vietnam
<b>236</b>	Virgin Islands (British)
<b>237</b>	Wallis and Futuna Islands
<b>238</b>	Western Sahara
<b>239</b>	Yemen
<b>240</b>	Zambia
<b>241</b>	Zimbabwe