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Appendices

A Manual to Measuring and Monitoring Resource Efficiency and Greenhouse Gas Emissions in the Hotel and Conference Sector

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Appendix 1 Monitoring Plan Template

Template for developing a data collection plan for Indicators. (To be adapted as needed)

Indicator	Sub Indicator
Water	Greywater use
Where is the information available?	
Greywater is pumped to tank – no meter We can record hours pump in use each day. We know the pump rate 15Litres / minute.	
Who is going to collect data?	**Who will collate the information?**
Water Treatment Plant Manager will record every day Responsible Staff Name:	Information will be passed to Finance office each week (This is the same process used for weekly data from the WTP). Finance takes a copy and return to WTP. Finance staff enter data to Spreadsheet Responsible Staff Name:
What documents needed:	**Where is file located?**
Daily log sheet	File pathway:
Where is it located?	
Maintenance office	
Who will enter into RE and GHG Tool?	
Finance enter information ONCE a month before the 7th of the month. Responsible Staff name:	

Appendix 2

Methodology for calculating GHG emissions in baseline data and mitigation scenarios

In order to estimate a GHG emission reduction related to the implementation of specific mitigation options, a hotel has to compare the emissions, which occur in a baseline scenario (without the mitigation options) with the emissions, which occur in a mitigation scenario (including the mitigations options).

Calculation of emissions in a baseline scenario

Baseline emissions can be defined as those that occur in a business-as-usual case, one in which no new mitigation options such as energy efficiency and/or renewable energy options are taken. From a theoretical point of view, this assumes that the technologies of specific equipment (refrigerators, TV in rooms for example) used by a hotel do not change over time. This may not be true as improvement in energy efficiency slowly occurs over time. This is known as autonomous energy efficiency improvement and has a historical rate of about 1 per cent. This happens because there are always minor refurbishments or replacement of appliances, and because new appliances are normally more efficient. This has been neglected in these guidelines, but can be included in a baseline, if desired.

The emissions in a base year (y) can be calculated using the general formula:

$EM_y = \sum^{n}_{n=1} EN_{n,y} * EF_n + EL_y * EF_{EL,y}$ (formula 1)

Though this formula looks complicated at first view, it is in fact a simple addition of different parameters.

The first part of the formula ($\sum nn=_1 EN_{n,y} * EF_n$) is the sum of the amount of each fuel used by the business for its energy activities, multiplied by the emission factor of the fuel considered.

The second part of the formula ($EL_y * EF_{EL,y}$) is the total amount of electricity used from the grid by the business, multiplied by the grid emission factor.

The variables used in this formula are summarized in the Table 1.

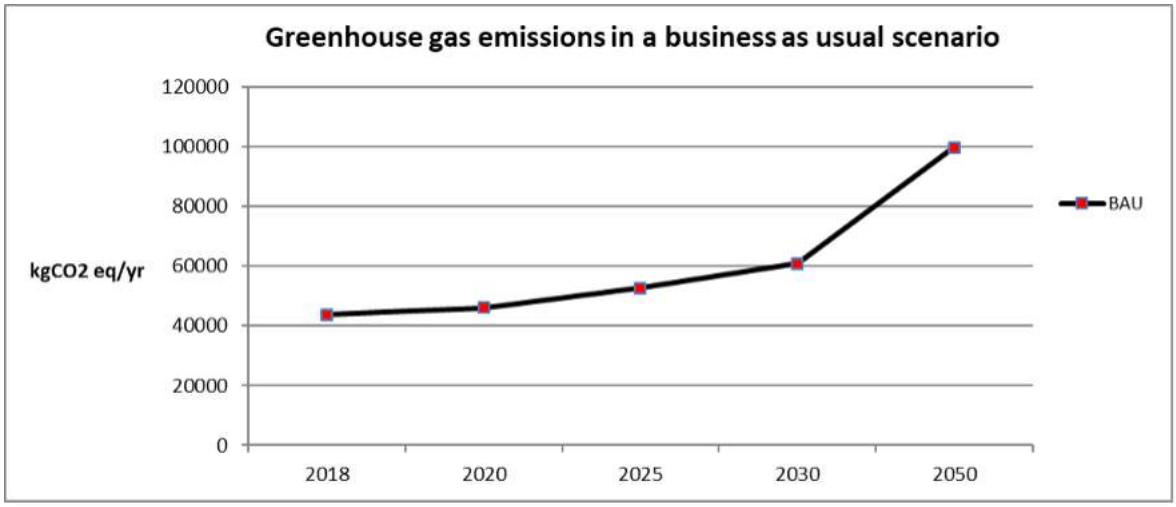
Table 2: Summary of the variables used in the formula for calculating the emissions in a base year (y).

Variable	Definition	Units	Where to find the infor-mation
EM_y	Total emissions of the energy activities of a bu-siness for a given year (y)	Kg CO_2 eq (kilograms CO_2 equivalent)	This is the parameter calculated with the formula
$EN_{n,y}$	Amount of fuel n (natural gas, LPG, gasoline, diesel, etc) used by a business during the year y	The units for this va-riable may be different, depending on the fuel considered. It can be in kg for fuels such as coal or in m^3 for fuels such as natural gas, LPG, gasoline or diesel.	This information may be available with the management unit or the financial unit of the business
EF_n	Emission factor of a fuel n, that is, the amount of CO_2 pro-duced when using one unit of fuel n	Kg CO2 eq per unit of fuel	Default emission factors for all types of fuel can be found in the literature. The best reference for those factors are the 2006 IPCC Guidelines for National GHG In-ventories, which are the official international source for these factors
ELy	Amount of electricity used from the grid by a business in year y, that is, the total elec-tricity used by a business excluding electricity self-generated or procured from renewable energy	Kwh	This information is typically found in the electricity bill of a business
$EFEL_{,y}$	Grid emission factor in year y, that is, the amount of CO2 emission asso-ciated with each unit (Kwh) of electricity provided by an electricity system (grid).	Kg CO2 per Kwh	This information may be available on the website of the ministry of energy or with experts from this ministry. This information can also be found in international reports submitted by a country to the climate change conven-tion (UNFCCC) such as national GHG inventories

Now that the emissions for the base year (y) have been calculated, it is possible to project these emissions for any future year (y1). To do so, the business needs to multi-ply the amount of each fossil fuel as well as the amount of electricity considered in the base year (y) by a growth factor, that is, by the expected increase of fossil fuel or elec-tricity by the year y1. Then by applying the same formula (1), it is possible to calculate the corresponding emissions expected in the future year y1.

By applying this approach to different future years (y2, y3, y4 …), a business can calculate the emissions that will occur in those years. These results can be represented on a graph by drawing a curve comparing the amounts of emissions for the different years. This curve is called the business-as-usual scena-rio (Figure 1). It has to be noted that the bu-siness-as-usual scenario is a theoretic one as the curve represents emissions in future years, that is, emissions that have not occur-red yet. This scenario is thus made ex-ante.

Figure 1: Example of curve representing a business-as-usual scenario.



It has to be noted that:

(i) In the approach and example described above, the grid emission factor has been considered as constant over time horizon of the baseline.

(ii) If there is no change in the amounts of fossil fuels and electricity over the time horizon of the baseline, that is, if they are considered as constant ¬– that is, equal to the base year – the baseline will be horizontal.

(iii) If a business plans to expand for guestrooms and meeting rooms during the baseline time horizon, an alternative way to take this expansion into account in the approach, is by multiplying the emissions of a year by the ratio of the new area (guestroom + corridors + meeting rooms) of the hotel to the old area. In this case, it is assumed that energy use intensity does not change with this expansion for the baseline.

Calculation of emissions in mitigation scenario

A hotel can set an emissions reduction target, which can be achieved by reducing energy use per unit of floor area per year (kWh/m2/yr) and/or by replacing fossil fuels with renewable energy. Different mitigation options, such as using more efficient equipment or increased use of renewable energy for electricity generation, can be used. However, the specific contribution from individual applications such as air-conditioning, lighting, appliances etc. to an emissions reduction target may not be possible to see from an energy bill where consumption is aggregated. To verify if an emissions target has been achieved, the business needs to be able to calculate the emissions related to a mitigation scenario.

To calculate the emissions for a specific year y1 related to a mitigation scenario, one has to distinguish between the contribution to emissions reduction by (a) a lower use of different energy (fuel) types through energy efficiency improvement, and (b) the contribution to emissions reduction by a lower use of electricity from the grid through energy efficiency improvement and/or increased use of renewable energy for electricity generation, that is, through electricity self-generated or procured from renewable energy replacing electricity from the grid produced with fossil fuels. These two contributions can be expressed by:

a. Decrease in energy consumption of fuel n in year y1 resulting from improved efficiency expressed by (ENn,y1 -

ENnd,y1), where ENnd,y1 indicates the new (lower) amount of fuel n in year y1.

b. Decrease in electricity consumption from the grid in year y1 resulting from energy efficiency improvement and/or electricity self-generated or procured from renewable energy expressed by (ELy1 - ELdy1), where ELdy1 indicates the new (lower) amount of electricity used from the grid in year y1.

The emissions for year y1 related to a mitigation scenario can then be calculated using the general formula:

$EM_{y1} = \sum^{n}_{n=1} EN_{nd,\,y1} * EF_n + EL_{dy1} * EFE_{L,y}1$ (formula 2)

It has to be noted that this formula is similar to the previous formula used to calculate the emissions in the base year.

Finally, the emissions reduction achieved in a year y1 can then be calculated as the difference between the emissions in year y1 in the business-as-usual scenario and the emissions in year y1 in the mitigation scenario. The emissions reduction, expressed by ERy1, achieved in year y1 can be calculated using the general formula:

$ER_{y1} = \sum^{n}_{n=1} (EN_{n,y1} - EN_{nd,\,y1}) * EF_n + (EL_{y1-} ELdy1) * EF_{EL,y1}$ (formula 3)

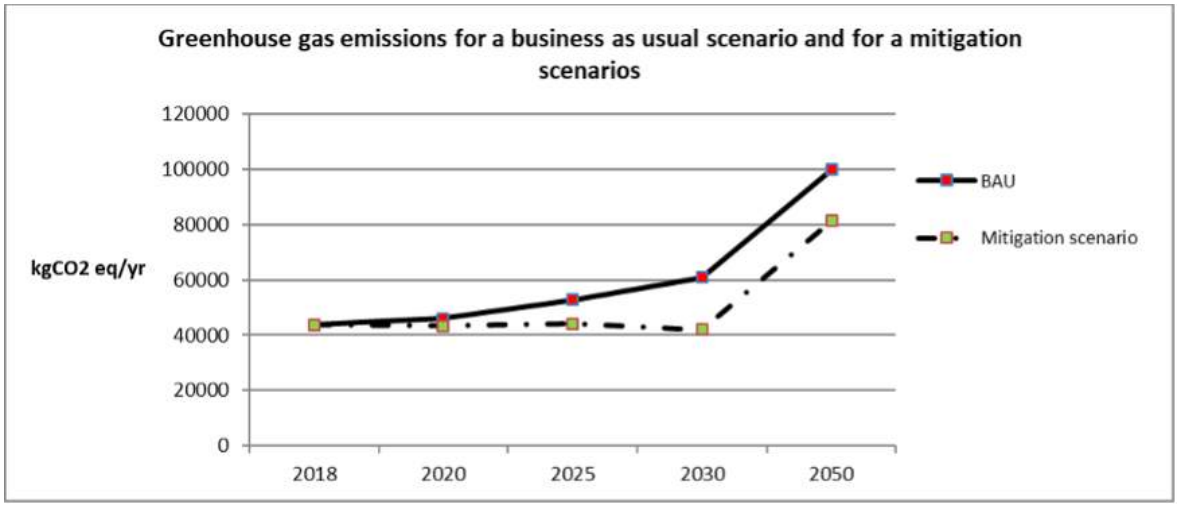
Again, though this formula may look complicated at first view, it is in fact a simple combination of subtractions and additions of different parameters.

The first part of the formula (∑nn=1 [ENn,y1 - ENnd, y1] * EFn) is the sum of the emissions reductions related to the use of different fuels used by the business for its energy activities, calculated as the difference between the emissions in the business as usual scenario and the emissions in the mitigation scenario, multiplied by the emission factor of each fuel considered.

The second part of the formula (ELy1- ELdy1) * EFEL,y1) is the emissions reduction related to the use of electricity from the grid by the business, calculated as the difference between the electricity used in the business as usual scenario and the electricity used in the mitigation scenario, multiplied by the grid emission factor.

It has to be noted that for each point in time (y1, y2, y3,…), the emissions reduction calculated with the formula (3) is actually the difference between the result calculated using the formula (1) combined with the growth factor of the corresponding year, and the result calculated using the formula (2). These results can be represented on a graph by drawing two curves comparing the amounts of emissions for the different years in the business-as-usual scenario and in the mitigation scenario. (Figure 2). The difference between the two curves for each point in time represent the emissions reduction achieved for the year considered.

Figure 2: Example of curves comparing the emissions in a business-as-usual scenario and in a mitigation scenario.



The approach implies then that the business has implemented some mitigation options allowing a reduction of energy use per unit of floor area per year (kWh/m2/yr) and/or by replacing fossil fuels with renewable energy. The approach compares the mitigation scenario resulting from the effective implementation of the mitigation options by the business with the theoretic business-as-usual scenario. It means that the emissions reductions calculated by this approach have been achieved by the hotel. The calculations of the emissions related to the mitigation scenario and of the emissions reductions are thus calculated ex-post. This approach can be used to verify if an emissions reduction target has been achieved.

If a business would like to estimate potential emissions reductions for a future year, that is, estimate emissions reductions which have not occurred yet, it would be necessary to assess specific mitigation options and estimate, for the year considered, the potential emissions reduction which would result from the implementation of each specific option. In this case the mitigation scenario and the related emissions reductions would also be theoretical it would be a projection of emissions to future years, that is, emissions and emissions reductions that have not occurred yet. This approach is useful when a business would like to assess what would be the impact of different mitigation options on emissions, for example in order to calculate an emissions reduction target in advance, or to find the right combination of mitigations options to achieve an emissions reduction target set in advance.

Appendix 3 Conversion Tables

Useful Conversion Factors

1 tonne	=	1000 Kg
1 kilolitre	=	6.2898 barrels
Therm	=	100,000 Btu
1Btu	=	1055.6 Joules (J)
1 MJ	=	106 J
3.60 MJ	=	1 kilowatt-hour (kWh)
1 GJ	=	109 J
1 TJ	=	1012 J
1 PJ	=	1015 J
29.0 PJ	=	1 million tonnes of coal equivalent
41.868 PJ	=	1 million tonnes of oil equivalent
1 barrel condensate	=	0.935 barrels of oil equivalent
1 PJ of Natural Gas	=	172,000 barrels of oil equivalent
1 tonne LPG	=	8.46 barrels of oil equivalent
1 cubic meter (m3)	=	35.315 cubic feet

Energy Values

Solid Fuel	Fuel composition[1]	GJ/tonne
Black Coal	Export coking coal	29.0
	Export steaming coal	27.0
	Local coal (electricity)	24.0
Brown Coal		9.5
Coke		27.0
Wood	Dry	16.2
Bagasse		9.6
Plant Biomass	Cotton trash	18.0

Gaseous Fuel	Fuel composition	MJ/m^3
Natural Gas		39.0
Ethane		66.0
LPG	Propane	93.3
LPG	butane	124.0
Town Gas	reformed gas	20.0
Gas	coke oven	18.1
Gas	blast furnace	4.0

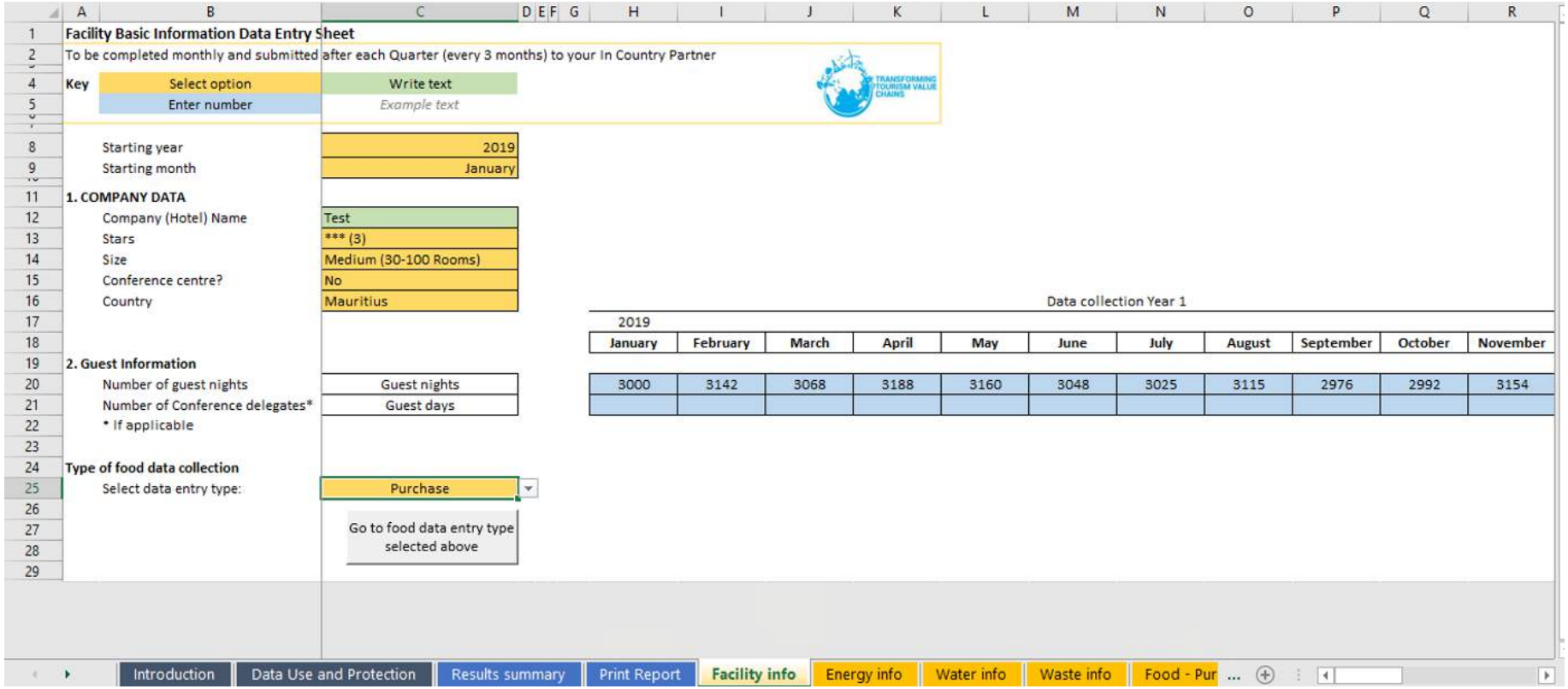
Liquid Fuel	Fuel composition	MJ/litre	Litre/Tonne	GJ/tonne
LPG	propane	25.3	1960	49.6
LPG	butane	27.7	1750	49.1
LPG	mixture	25.7	1928	49.6

1 https://w.astro.berkeley.edu/~wright/fuel_energy.html

Liquid Fuel	Fuel composition	MJ/litre	Litre/Tonne	GJ/tonne
Gasoline	aviation	33.0	1412	49.6
Gasoline	automotive	34.2	1360	46.4
Kerosene	power	37.5	1230	46.1
Kerosene	turbine fuel	36.8	1261	46.4
Kerosene	lighting	36.6	1270	46.5
Heating Oil		37.3	1238	46.2
Diesel Oil	automotive	38.6	1182	45.6
Diesel Oil	industrial	39.6	1135	44.9
Fuel Oil	low sulphur	39.7	1110	44.1
Fuel Oil	high sulphur	40.8	1050	42.9
Refinery Fuel		40.9	1050	42.9
Naphtha		31.4	1534	481
Lubricants		38.8	1120	43.4
Bitumen		44.0	981	42.7
Solvents		34.4	1229	44.0
Waxes		38.8	1180	45.8
Crude Oil		38.7	1160	44.9
Ethanol		23.4	1266	29.6
LNG	-160C & 300kPa	25.0	2174	54.4

Appendix 4 Resource Efficiency and GHG Emissions Tool

Screenshot of data requirements for Facility info, Energy, Water, Food, and Results summary
Screenshot of facility basic information (data entry sheet)



Facility Basic Information Data Entry Sheet

To be completed monthly and submitted after each Quarter (every 3 months) to your In Country Partner

Key	
Select option	Write text
Enter number	*Example text*

Starting year	2019
Starting month	January

1. COMPANY DATA

Company (Hotel) Name	Test
Stars	*** (3)
Size	Medium (30-100 Rooms)
Conference centre?	No
Country	Mauritius

2. Guest Information

Number of guest nights	Guest nights
Number of Conference delegates*	Guest days

* If applicable

Type of food data collection

Select data entry type: Purchase

Go to food data entry type selected above

Data collection Year 1

2019										
January	February	March	April	May	June	July	August	September	October	November
3000	3142	3068	3188	3160	3048	3025	3115	2976	2992	3154

Introduction | Data Use and Protection | Results summary | Print Report | Facility info | Energy info | Water info | Waste info | Food - Pur ...

Energy data entry sheet

3. Energy data entry sheet

Enter the data for Energy, using electricity and fuel bills or accounts.
This should include electricity use, and fuel use for generators and vehicles.
Please use the conversion tables first to get all values in MJ units.
"Other" fuel or electricity should only be selected as a last resort if your energy consumption does not fit into any existing category in the list.

Energy unit (Example: main complex meter)	Energy Type (Electricity, Fuel)	Unit	Data collection Year 1 — 2019 January	February	March	April	May	June	July	August	September	October	November
Generator backup	Diesel fuel	MJ	3200	2760	2347	2071	3452	2079	2390	2868	2015	2493	3409
Mains	Grid Electricity	MJ	156250	154063	158696	150775	157679	156118	158089	157899	156414	151126	157186
Shuttlebus	Petrol fuel	MJ	21600	21242	20222	24685	22684	22566	22283	23339	22911	21213	22391

Insert new row

Introduction | Data Use and Protection | Results summary | Print Report | Facility info | Energy info | Water info | Waste info | Food - Pur ...

Water data entry sheet

Water data entry sheet

Enter the data for water, using water bills and other information you have.
This should include both metered water from public supply, and own pumped or collected water. If you outsource laundry please specify tonnage.
Please insure all units are in cubic meters (m3).

Data collection Year 1

2019

4. Water Use

Water unit *(e.g. meter, borehole)*	Water source *(metered, unmetered)*	Unit	January	February	March	April	May	June	July	August	September	Oct
Main meter (engine room)	Water from metered sources	m3	110	100	115	115	150	100	120	120	100	1
Irrigation water - estimate	Water from non-metered sources	m3	60	60	60	60	60	60	60	60	60	6

Insert new row

5. Greywater Use

Collection tank 1 - used in toilets 2&3	Water from non-metered sources	m3	15	16	12.5	12	10.75	9.5	8.25	7	5.75	1

Insert new row

4a. Outsourced laundry

Do you outsource any laundry? Yes

Introduction | Data Use and Protection | Results summary | Print Report | Facility info | Energy info | Water info | Waste info | Food - Pur ...

Resource efficiency performance summary

Resource Efficiency Performance Summary

Will be populated once the data is entered

Indicator	Unit	Year 1													Indicator	Unit
		Jan-19	Feb-19	Mar-19	Apr-19	May-19	Jun-19	Jul-19	Aug-19	Sep-19	Oct-19	Nov-19	Dec-19	Year 1 Total		
Guest nights	number/month	3,000	3,142	3,068	3,188	3,160	3,048	3,025	3,115	2,976	2,992	3,154	3,055	36,923	Guest nights	number/month
Energy use	kWh/guest night	17	16	16	15	16	16	17	16	17	16	16	16	195	Energy use	kWh/guest night
Solid waste generated	kg/guest night	5	5	5	5	5	5	5	4	5	4	4	4	56	Solid waste generated	kg/guest night
Red meat	g/guest night	67	57	20	31	32	33	33	32	32	30	27	26	420	Red meat	g/guest night
Water use	l/guest night	70	56	61	59	70	56	62	60	56	69	72	75	764	Water use	l/guest night
Food waste generated	kg/guest night	0.8	0.8	0.7	0.8	0.7	0.6	0.8	0.8	0.8	0.7	0.7	0.8	9	Food waste generated	kg/guest night
Greenhouse gas footprint	kg of CO_2e/guest night	49	47	46	43	43	46	48	47	50	48	45	45	556	Greenhouse gas footprint	kg of CO_2e/guest night
Scarcity Water Footprint (food only)	l_{eq}/guest night	87	85	82	77	75	83	89	88	94	87	80	80	1,005	Water Footprint (food)	l/guest night
Single Use Plastics	kg/guest night	0.08	0.07	0.07	0.07	0.07	0.07	0.08	0.07	0.08	0.08	0.07	0.07	1	Single Use Plastics	kg/guest night

Show Guests Chart
Show Energy Chart
Show Solid Waste Chart
Show Red Meat Chart
Show Water Use Chart
Show Food Waste Chart

Introduction | Data Use and Protection | Results summary | Print Report | Facility info | Energy info | Water info | Waste info | Food - Pur ...

Net Zero trajectory

Pathway to Net Zero

In which year did you start recording your carbon footprint? What is your baseline year?

2021

This should be the first year you have data using this tool. Baselines calculated with other tools will not work here. Ideally this would be the first year you have full data but it is mandatory you have at least full scope 1 and 2 data.

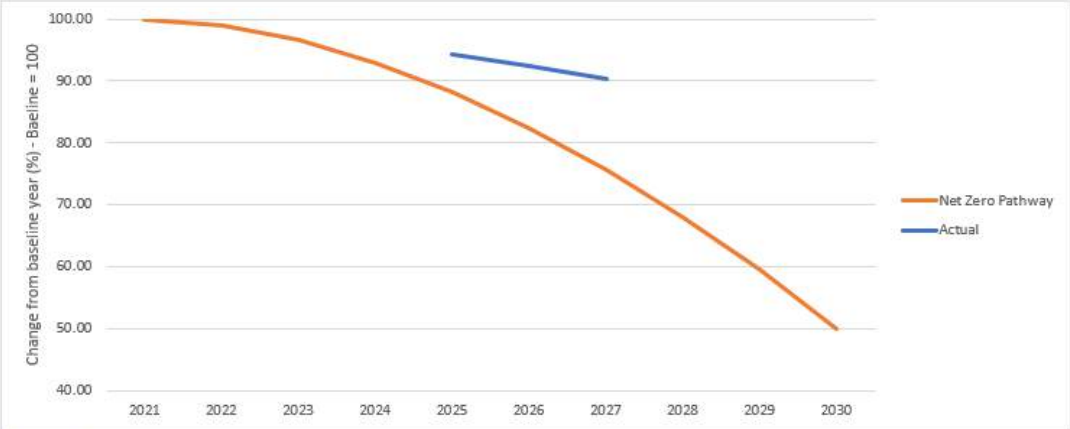
Enter your baseline data

Click the button to hide/unhide data entry

Baseline GHGs - tonnes CO2e

Scope 1	24
Scope 2	350
Scope 3	1050
Total	1424

What sort reduction path is your business following: Slow then fast - Reducing more and more as you go on



Interpreting this chart

The chart to the left shows the way your company's GHG footprint is changing over time using the data entered in this tool and compares it to a reduction pathway to net zero greenhouse gas emissions by 2050.

If the blue line is below the orange line then you are on track for net zero but if the blue line is above the orange line then you are not making enough progress to reach net zero by 2050 for the three years you have reported in this tool.

Please read all the assumptions and limitations below the chart. **This illustration is indicative**. It does not guarantee you are making enough or too little progress.

on track off track

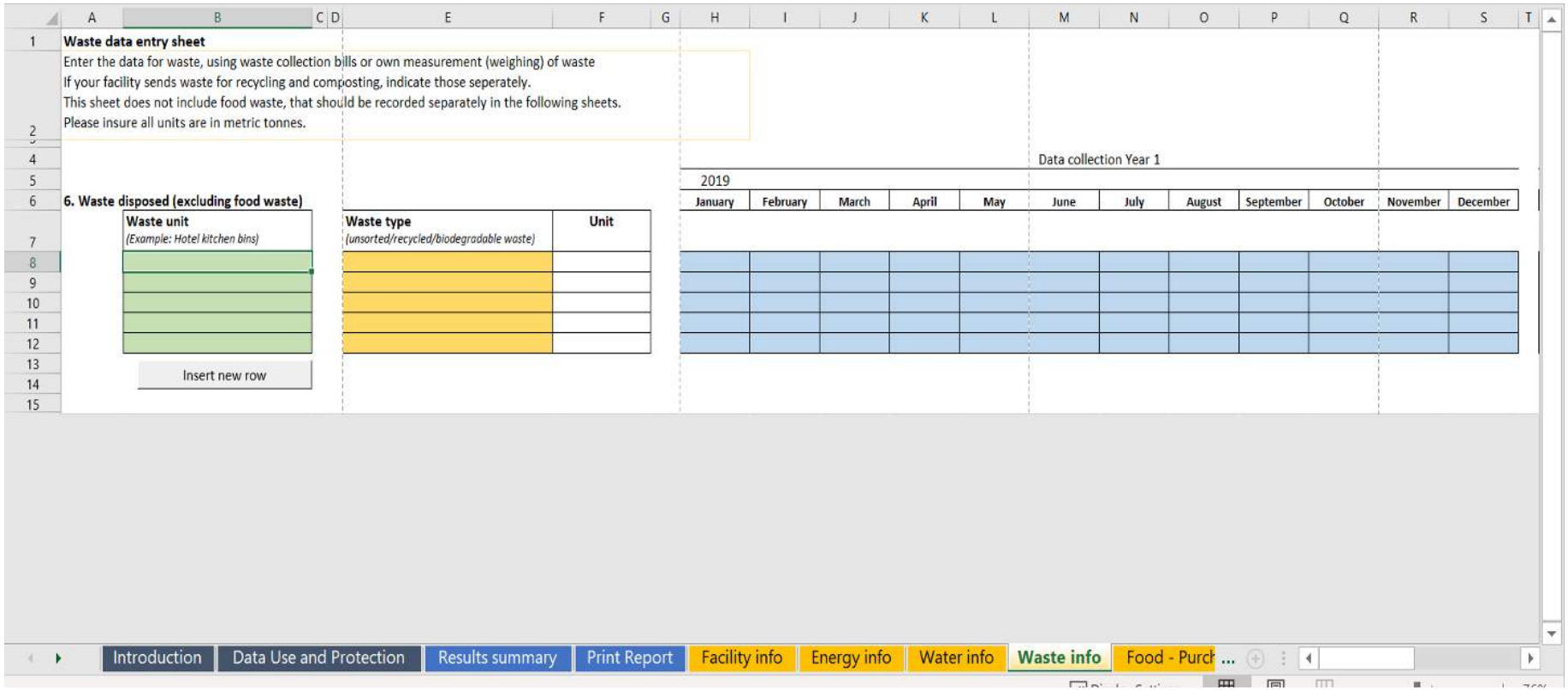
Assumptions

- Your reduction path described above reflects reality, even if you weren't measuring your emissions from the point you started to act.
- The year you started to act is your effective baseline year.

Introduction | Data Use and Protection | Results summary | Net Zero Trajectory | Print Report | Facility info | Energy info | Water info | Waste info | Food Waste Basic

Appendix 5 Waste Management Monthly Data Collection: Estimated Weight Templates

Waste data entry sheets



Waste data entry sheet

Enter the data for waste, using waste collection bills or own measurement (weighing) of waste
If your facility sends waste for recycling and composting, indicate those seperately.
This sheet does not include food waste, that should be recorded separately in the following sheets.
Please insure all units are in metric tonnes.

Data collection Year 1

2019

6. Waste disposed (excluding food waste)

Waste unit (Example: Hotel kitchen bins)	Waste type (unsorted/recycled/biodegradable waste)	Unit	January	February	March	April	May	June	July	August	September	October	November	December

Insert new row

Introduction | Data Use and Protection | Results summary | Print Report | Facility info | Energy info | Water info | Waste info | Food - Purch ...

Solid Waste* Required

Option 1

If you have a waste contractor that removes from your premises,

1. Do they weigh the weight of waste collected in the vehicle?
2. Do they weigh all indivu-idual bins at the point of collection?

If yes, then ask your contractor to provide the weight of solid waste each month

Frequency:	Data source:	Unit:
Monthly	Purchase Order	Total amount in Month Kg

Option 2

Step 1: Weigh the content of your bins each day for 1 week. (Data Weighing Sheet)
Step 2: Record the amount the number of bins filled each week (Data Weighing Sheet)
Step 3: Calculate Average Bin Weight (Average Weight Sheet)
Step 4: Record Number of bins filled each month (Monthly bin sheet)

Monthly Total Solid Waste (Kg) = Average Weight of bin content X Number of bins disposed each month

Frequency:	Data source:	Unit:
Monthly	Bin weights x No. of bins filled each month	Total amount in Month Kg

Solid Waste - Option 2

Exemple of Data Weighing Sheet

Date	Description	Volume of Bin	Weight of Waste in Kg (A)	No. bins collected in day (B)	Total weight of Waste in Kg (C) (A x B= C)
Day 1	*Back of Kitchen*	*240L*	*80 Kg*	*6*	*480 KG*
Day 1	*Leisure centre*	*240L*	*40 Kg*	*2*	*80 KG*
Day 1	*Storage Yard Mixed Bin*	*1,100 L*	*150 Kg*	*2*	*300Kg*
Day 1	*Storage Yard – Cardboard Bin*	*1,100 L*	*135 Kg*	*4*	*540Kg*
Day 1	*Storage Yard – Glass Bin*	*Crate*	*10 Kg*	*20 crates returned to Supplier*	*200Kg*

Repeat for 7 days

Solid Waste - Option 2

Exemple of Average Weight Sheet

Description of Bin	Volume of Bin	Total Weight of Waste in Kg per week (Day1-Day 7 total in KG) (A)	No. bins collected in week (Day 1 to Day 7 total count) (B)	Average Weight of Waste in Bin in Kg (C) (A/B= C)
Back of Kitchen	*240L bin*	*3,560*	*41*	*82 Kg*
Leisure centre	*240L bin*	*630*	*16*	*39 Kg*
Storage Yard Mixed Bin	*1,100 L*	*2,280*	*18*	*127 Kg*
Storage Yard – Cardboard Bin	*1,100 L*	*3,950*	*32*	*124 Kg*
Storage Yard – Glass Bin	*Crate*	*180*	*18*	*10Kg*

Solid Waste - Option 2

Exemple of Monthly Bin Sheet

AREA: Back of Kitchen Bin									
Date	No.	Date	No.	Date	No.	Date	No.	Date	No.
Mon 1/07/2018	*6*	*Mon 8/07/2018*	*6*	*Mon Day 15*	*6*	*Mon Day 22*	*6*	*Mon Day 29*	*6*
Tues 2/07/2018	*7*	*Tues Day 9*	*7*	*Tues Day 16*	*5*	*Tues Day 23*	*7*	*Tues Day 30*	*7*
Wed 3/07/2018	*5*	*Wed Day 10*	*8*	*Wed Day 17*	*7*	*Wed Day 24*	*5*	*Wed Day 31*	*5*
Thurs 4/07/2018	*6*	*Thurs Day 11*	*6*	*Thurs Day 18*	*6*	*Thurs Day 25*	*9*	*Total No*	*218*
Fri 5 July 2018	*9*	*Fri Day 12*	*9*	*Fri Day 19*	*9*	*Fri Day 26*	*6*	*Average Weight of Bin*	*82*
Sat 6 July	*8*	*Sat Day 13*	*5*	*Sat Day 20*	*8*	*Sat Day 27*	*8*	*TOTAL WEIGHT*	*17,876*
Sun 7 July	*9*	*Sun Day 14*	*9*	*Sun Day 21*	*9*	*Sun Day 28*	*9*		

Option 3

Step 1: Weigh the content of 3 bin bags per bin (Bin Bag Weighing Sheet)
Step 2: Calculate Average Bin Bag Weight (Bin Bag Weighing Sheet)
Step 3: Record Number of Bin Bags filled each month (Monthly Bin Bag Sheet)

Monthly Total Solid Waste (Kg) = Average Weight of Bin Bag content X Number of Bin Bags disposed each month

Frequency:
Monthly

Data source:
Bin Bag weights x No. of bags filled each month

Unit:
Total amount in Month Kg

Solid Waste - Option 3

Exemple of Bin Bag Weighing Sheet

Date	Description	Weight of Waste in Bin Bags (3 samples) in Kg (A)			Average Weight of Bin Bag in Kg D=(A+B+C)/3
		A	B	C	
Day 1	Back of Kitchen	5 Kg	6 Kg	5Kg	5.3

Solid Waste - Option 3

Exemple of Monthly Bin Bag Sheet

AREA: Back of Kitchen Bin									
Date	No.	Date	No.	Date	No.	Date	No.	Date	No.
Mon 1/07/2018	16	Mon 8/07/2018	16	Mon Day 15	17	Mon Day 22	16	Mon Day 29	16
Tues 2/07/2018	22	Tues Day 9	22	Tues Day 16	22	Tues Day 23	22	Tues Day 30	22
Wed 3/07/2018	17	Wed Day 10	17	Wed Day 17	16	Wed Day 24	17	Wed Day 31	17
Thurs 4/07/2018	22	Thurs Day 11	22	Thurs Day 18	22	Thurs Day 25	22	Total No	587
Fri 5 July 2018	20	Fri Day 12	20	Fri Day 19	20	Fri Day 26	20	Average Weight of Bin Bag	5.3
Sat 6 July	19	Sat Day 13	19	Sat Day 20	19	Sat Day 27	19		
Sun 7 July	17	Sun Day 14	17	Sun Day 21	17	Sun Day 28	17	Total Weight	3,111

Appendix 6 Food and Drink procurement guide

Purchase-based food inventory (Tier I)

Country: Mauritius

Instructions

1. Be careful with the units:
- purchases should be in kgs or litres. In-country partners should work with the hotel to get their purchase ledger with might be in units or monetary units and will need to be pre-converted to kg though price/kg or weight/unit

Hide Food Purchase Summary Rows

Show Food Purchase Summary Rows

Item names	Food category	Purchases in kg												TOTAL
		Jan-19	Feb-19	Mar-19	Apr-19	May-19	Jun-19	Jul-19	Aug-19	Sep-19	Oct-19	Nov-19	Dec-19	YEAR 1
Sirloin steak	Beef	200	180	60	100	100	100	100	100	95	90	85	80	1,290
Coca-cola 500 ml bottle	Soft drinks and bottled water	20,000	22,000	20,000	20,000	20,000	20,000	20,000	20,000	20,000	20,000	20,000	20,000	242,000
Potatoes	Vegetables	300	300	320	300	300	300	300	300	300	300	300	300	3,620
Beer	Beer, wine & similar	4,050	4,300	4,150	4,000	3,850	4,050	4,300	4,150	4,375	4,490	4,605	4,720	51,040
Chicken	Chicken and Poultry	1,356	1,252	1,148	1,044	940	1,100	1,260	1,420	1,580	1,356	1,252	1,148	14,856
Fruit	Fruit	4,860	5,160	4,980	4,800	4,620	4,860	5,160	4,980	4,800	4,620	4,440	4,260	57,540
Coffee	Coffee	1,627	1,502	1,378	1,253	1,128	1,320	1,512	1,704	1,896	1,627	1,502	1,378	17,827
Oil	Vegetable oils	5,832	6,192	5,976	5,760	5,544	5,832	6,192	5,976	5,760	5,544	5,328	5,112	69,048
Cheese	Cheese	300	300	320	300	300	300	300	300	300	300	300	300	3,620
Fish - local	Fish	1,506	1,252	1,148	1,044	940	1,100	1,260	1,420	1,580	1,356	1,252	1,148	15,006
Canned tuna	Fish	500	500	500	500	500	500	500	500	500	500	500	500	6,000
Bread	Grains, breads & pasta ex. Rice	4,050	4,300	4,150	4,000	3,850	4,050	4,300	4,150	4,000	3,850	3,700	3,550	47,950
Rice	Rice	1,356	1,252	1,148	1,044	940	1,100	1,260	1,420	1,580	1,356	1,252	1,148	14,856
Vegetable	Vegetables	4,860	5,160	4,980	4,800	4,620	4,860	5,160	4,980	4,800	4,620	4,440	4,260	57,540
Yams and cassavas	Yams and cassavas	1,627	1,502	1,378	1,253	1,128	1,320	1,512	1,704	1,896	1,627	1,502	1,378	17,827
Tea	Tea	200	200	200	200	200	200	200	200	200	200	200	200	2,400
Wine	Beer, wine & similar	300	500	700	900	1,100	1,100	1,100	1,100	1,100	1,100	1,100	1,100	11,200
Spirits	Spirits	400	450	500	550	600	600	600	600	560	520	480	440	6,300

Appendix 7 Activity data to be collected as input to the Greenkey Carbon calculation tool[2]

- Total area of the accommodation (m2)
- Total area of guest rooms and corridors (m2)
- Total area of meeting facility space (m2)
- Total area of private or outsourced space inside the accommodation (m2)
- Total number of guest rooms
- Total number of occupied rooms for the reporting year
- Total electricity consumption for the reporting year (kWh)
- Total gas consumption for the reporting year (kWh). Gas consumption measured in cubic meters or cubic feet should be converted to kWh. This website will help you: http://www.energylinx.co.uk/gas_meter_conversion.html
- Total oil consumption for the reporting year (litres)
- If laundry is outsourced, the laundry tonnage for the reporting year (m3)
- If the site has air-conditioning or refrigeration units, any gas leaks of over 100 kg during the reporting year (yes or no)
- If the site has air-conditioning or refrigeration units, any major maintenance during the reporting year (yes or no)
- If the site own/operate vehicles, the amount of gasoline/petrol (litres), diesel fuel (litres) and/or LPG (litres)

2 The GreenKey tool uses the HCMI methodology for the calculations and the same information that HCMI needs to ensure cross-industry coordination.

Appendix 8 Additional tools to support the Implementation Plan

- **Action Plans Development Templates for Countries:** this document serves as a Template to be filled in by Tourism Businesses in countries which are involved in the Transforming Tourism project of UNEP. Once completed, the Action Plan facilitates the planning of the Actions to be taken to Build Back Better.

- **Selection of Activities:** it serves as a Checklist in order to facilitate the procedure of Building Back Better through a step-by-step approach. (Separate versions available for Partners of the Transforming Tourism Project, Tourism Businesses and Governments)

The materials are available here: https://www.oneplanetnetwork.org/sustainable-tourism/covid-19-response-toolkit

Appendix 9: Hotel mitigation tool for estimating GHG Emissions

The Hotel mitigation tool for estimating GHG Emissions (GACMO) tool allows businesses to estimate past/current GHG emissions related to the energy and food activities and estimate GHG emissions reduction potential and costs associated with specific mitigation options

The GACMO tool is also used by government to develop sectoral and national baseline and mitigation scenarios related to the sectors considered in national GHG inventories (for example for developing their Nationally Determined Contributions). The methodologies and calculations for estimating GHG emissions and GHG emissions reduction potentials integrated into the GACMO tool are based on the IPCC methodologies. It can also be downloaded in English and in Spanish at this link and is available in a Demo version to support users to fill it in.