



Sime Darby Property Carbon Footprint Project (CFP)

Guidelines for CFP Data Collection

– Revision 2

For Hospitality & Leisure and Asset Management

18 March 2020

MEMBER OF
**Dow Jones
Sustainability Indices**

In collaboration with  **SAM**
a S&P Global Brand



Property

Improving Standardized Procedure on Calculation/Estimation by Hospitality & Leisure and Asset Management



Content:

1.Objectives

- 2.Types of Emission Sources for Property Division
- 3.Methodologies
- 4.General Guidelines
- 5.Guidelines for Data Collection
- 6.Appendix

1. Objectives

- 1** To guide all contractors and PICs during data collection process, especially for the case where document/ record is not available
- 2** To ensure standardized procedure on calculation and estimation of data throughout Sime Darby Property.
- 3** To obtain accurate and complete data, and ultimately to obtain accurate results
- 4** To ensure all carbon PICs have a clear understanding of data requirements in CFP

Improving Standardized Procedure on Calculation/Estimation by Hospitality & Leisure and Asset Management



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1. Objectives
- 2. Types of Emission Sources**
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2. Types of Emission Sources for SD Property

A. PROCESS:

1. Purchased electricity
2. Electricity generation
3. Boilers
4. Agricultural machinery
5. Heavy machinery
6. Welding & oxygen-cutting
7. Refrigerants fugitive emissions
8. Stoves

B. TRANSPORT (controlled vehicles):

1. Cars
2. Light good vehicles
3. Heavy good vehicles
4. Motorcycles

C. BUILDINGS:

1. Purchased electricity
2. Back-up electricity generation
3. Stoves

D. BUSINESS TRAVEL:

1. Car & air travel



Excluded in CFP since 2010 onwards

Included in CFP for SD Property



Property

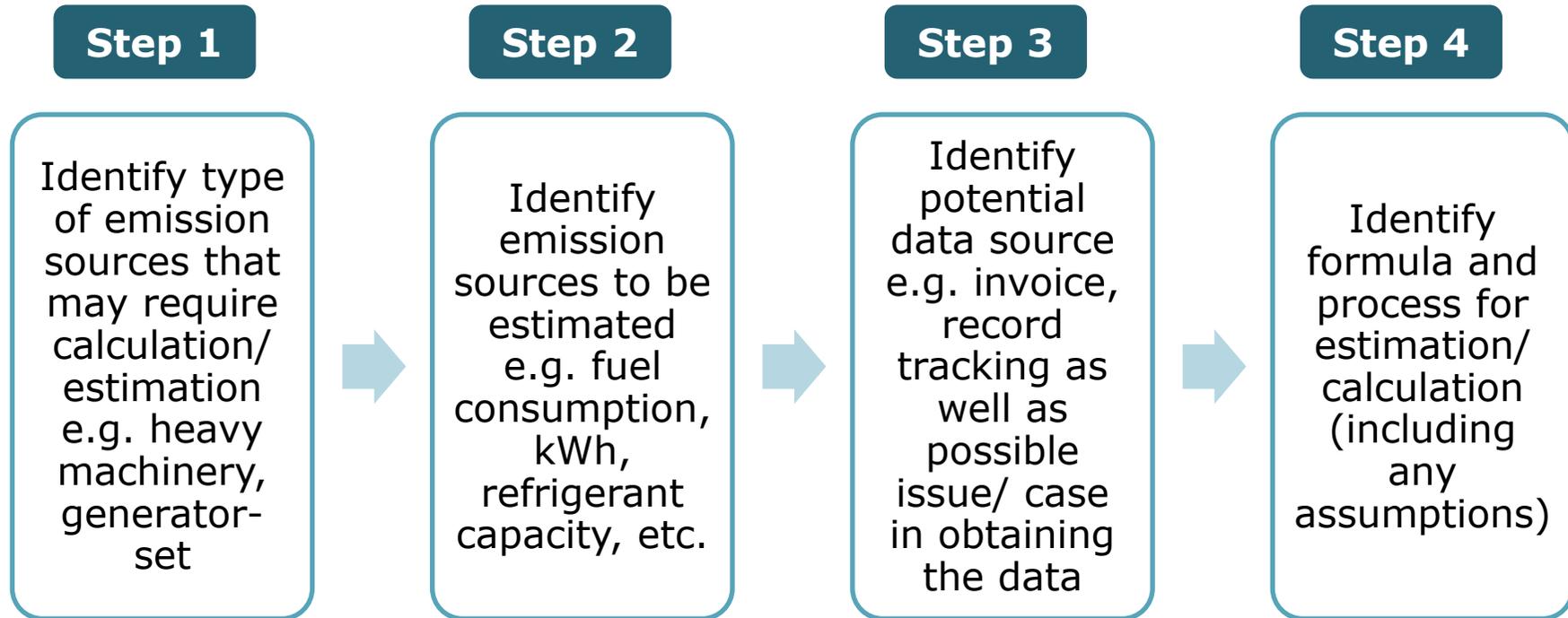
Improving Standardized Procedure on Calculation/Estimation by Hospitality & Leisure and Asset Management



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3. Methodologies (1/2)



3. Methodologies (2/2)



No.	Type of Emission Sources	Emission Sources	Potential data source(s)	Case/ Issue	Calculations/ Process	Assumptions/ Remarks
1.	Purchased electricity	Electricity consumption (kWh)	1. TNB/ utility bills	Data is in kWh	Extract data (in kWh) directly from bills	Data is complete from 1 st to 30 th / 31 st every month
			2. TNB/ utility bills	Data is in RM	Convert data from RM to kWh based on current electricity tariff: Estimated electricity usage (kWh) = [Electricity usage (RM) / current electricity tariff (RM/kWh)]	Please refer Appendix 3 for electricity tariff (based on types)
			3. TNB/ utility bills	Record/bills are incomplete	Extrapolate data based on existing monthly bills Estimated electricity usage (kWh) = [Average electricity usage per month (kWh/mth) x (12-n)] + total electricity usage of <i>n</i> months <i>n</i> denotes the number of months data is available	Electricity usage does not vary substantially from month to month

EXAMPLE

Improving Standardized Procedure on Calculation/Estimation by Hospitality & Leisure and Asset Management



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4. General Guidelines

- ✓ **Data reported in Carbon Calculator Template shall be strictly within the reporting period only** (either 1st Jan – 30th June OR 1st Jul – 31st Dec).
- ✓ Please **email supporting documents/ evidences** upon data submission **(COMPULSORY)**
- ✓ Please **keep and document all calculations/ workings** that were made during estimation/ consolidation of data **for minimum of 5 years,** and filed properly to avoid discrepancy.
- ✓ Please ensure **estimation is made on rationale and proper justification**, and properly documented – refer this document: 'SDP Carbon Inventory Guideline' as guidance to make estimation
- ✓ **All data reported shall be in the unit as specified** in the Data Collection Form and Carbon Calculator Template.
- ✓ Please ensure **correct data are filled-in and data are filled-in at the right section and categories** to avoid misleading reporting

Improving Standardized Procedure on Calculation/Estimation by Hospitality & Leisure and Asset Management



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- 5. Guidelines for Data Collection**
6. Appendix



5. Guidelines for Data Collection

Data Requirements for CFP

1 Type of Emission Sources

A. PROCESS:

1. Purchased electricity
2. Electricity generation
3. Boilers
4. Agricultural machinery
5. Heavy machinery
6. Welding & oxygen-cutting
7. Refrigerants fugitive emissions
8. Stoves

B. TRANSPORT (controlled vehicles):

1. Cars
2. Light good vehicles
3. Heavy good vehicles

C. BUILDINGS:

1. Purchased electricity
2. Back-up electricity generation

D. BUSINESS TRAVEL:

1. Car & air travel



Excluded in CFP since 2010 onwards



Property

5. Guidelines for Data Collection

Data Requirements for CFP

Type of Emission Sources

A. PROCESS:

1. Purchased electricity
2. Electricity generation
3. Boilers
4. Agricultural machinery
5. Heavy machinery
6. Welding & oxygen-cutting
7. Refrigerants fugitive emissions

Any of these activities that took place at the **Operating Units**



5. Guidelines for Data Collection (1/12)

A. PROCESS: PURCHASED ELECTRICITY

No.	Type of Emission Sources	Emission Sources	Potential data source(s)	Case/ Issue	Calculations/ Process	Assumptions/ Remarks
1.	Purchased electricity	Electricity consumption (kWh)	1. TNB/ utility bills	Data is in kWh	Extract data (in kWh) directly from bills	Data is complete from 1 st to 30 th / 31 st every month
			2. TNB/ utility bills	Data is in RM	Convert data from RM to kWh based on current electricity tariff: Estimated electricity usage (kWh) = [Electricity usage (RM) / current electricity tariff (RM/kWh)]	Please refer Appendix 4 for electricity tariff (based on types)
			3. TNB/ utility bills	Record/bills are incomplete	Extrapolate data based on existing monthly bills Estimated electricity usage (kWh) = [Average electricity usage per month (kWh/mth) x (12- <i>n</i>)] + total electricity usage of <i>n</i> months <i>n</i> denotes the number of months data is available	Electricity usage does not vary substantially from month to month

5. Guidelines for Data Collection (2/12)

A. PROCESS: ELECTRICITY GENERATION (GEN-SETS)

No.	Type of Emission Sources	Emission Sources	Potential data source(s)	Case/ Issue	Calculations/ Process	Assumptions/ Remarks
2.	Electricity generation	Fuel consumption	1. Fuel usage record/ inventory	Data is recorded through fuel usage inventory	Extract data (in litre or m ³) on gen-set usage from fuel usage record/ inventory	Please use "Fuel Usage Tracking" template (Appendix 1)
			2. Invoice from fuel purchase	Fuel is used for different activities e.g. gen-sets, heavy machinery etc) No breakdown of fuel usage for different activities	1. Identify list if machinery/activities that are also using this fuel 2. Estimate percentage breakdown of how much fuel was used for this activity (e.g. 20% was used for gen-sets) 3. Estimated fuel usage for gen-set (in litre or m ³) = (% breakdown for gen-set x total amount of fuel)	Note: 1. Litre refers to fuel usage for diesel 2. m ³ refers to fuel usage for natural gas
			3. Machinery specification and running hours	Fuel usage record or invoice are not available	1. Identify no. of machinery used for this activity 2. Identify machinery capacity & running hours 3. Identify average hourly fuel consumption for gen-sets from the "Estimation Guidelines" 4. Estimated fuel usage for gen-set = [Estimated hourly fuel consumption based on gen-set capacity (refer table) x Running hours x No. of machinery with similar capacity]	Please refer "Estimation Guidelines" for estimation of hourly fuel consumption (Appendix 2) For unknown gen-set load, please assume it is half loading

5. Guidelines for Data Collection (3/12)

A. PROCESS: BOILERS						
No.	Type of Emission Sources	Emission Sources	Potential data source(s)	Case/ Issue	Calculations/ Process	Assumptions/ Remarks
3.	Boilers	Fuel consumption	1. Fuel usage record/ inventory	Data is recorded through fuel usage inventory	Extract data (in litre) on boiler usage from fuel usage record/ inventory	Please use "Fuel Usage Tracking" template (Appendix 1)
			2. Invoice from fuel purchase	Fuel is used for different activities e.g. gen-sets, heavy machinery, etc) No breakdown of fuel usage for different activities	<ol style="list-style-type: none"> 1. Identify list if machinery/activities that are also using this fuel 2. Estimate percentage breakdown of how much fuel was used for this activity (e.g. 10% was used for boiler) 3. Estimated fuel usage for boiler (in litre) = % breakdown of fuel for boiler x total amount of fuel (litre) 	

5. Guidelines for Data Collection (4/12)

A. PROCESS: AGRICULTURAL MACHINERY

No.	Type of Emission Sources	Emission Sources	Potential data source(s)	Case/ Issue	Calculations/ Process	Assumptions/ Remarks
4.	Agricultural machinery	Fuel consumption	1. Fuel usage record/ inventory	Data is recorded through fuel usage inventory	Extract data (in litre or scf) on agricultural machinery usage from fuel usage record/ inventory	Please use "Fuel Usage Tracking" template (Appendix 1)
			2. Invoice from fuel purchase	Fuel is used for different activities e.g. gen-sets, heavy machinery, etc) No breakdown of fuel usage for different activities	<ol style="list-style-type: none"> 1. Identify list if machinery/activities that are also using this fuel 2. Estimate percentage breakdown of how much fuel was used for this activity (e.g. 30% was used for agricultural machinery) 3. Estimated fuel usage for ag. machineries (in litre or scf) = % breakdown of fuel for ag. machinery x total amount of fuel (litre or scf) 	<p>Note:</p> <ol style="list-style-type: none"> 1. Litre refers to fuel usage for diesel, petrol or LPG 2. Scf refers to fuel usage for compressed natural gas
			3. Size of land area of agricultural work (for cutting grass only)	Size of land that the agricultural work is done is available	<ol style="list-style-type: none"> 1. Identify size of land area (in hectare) that is used for this activity 2. Estimated fuel usage for ag. machineries = [Average Fuel Consumption x land size used for the activity (in hectare)] 3. Estimated fuel usage for ag. machinery = [4.4 litres/ha x land size used for the activity (in hectare)] 	<p><i>This estimation is for grass cutting activity only</i></p> <p>'Average Fuel Consumption for Agricultural Machinery' (for grass cutting) is 4.4 litres/ha</p>

5. Guidelines for Data Collection (5/12)

A. PROCESS: HEAVY MACHINERY

No.	Type of Emission Sources	Emission Sources	Potential data source(s)	Case/ Issue	Calculations/ Process	Assumptions/ Remarks
5.	Heavy machinery	Fuel consumption	1. Fuel usage record/ inventory	Data is recorded through fuel usage inventory	Extract data (in litre or scf) on heavy machinery usage from fuel usage record/ inventory	Please use "Fuel Usage Tracking" template (Appendix 1)
			2. Invoice from fuel purchase	Fuel is used for different activities e.g. gen-sets, heavy machinery, etc) No breakdown of fuel usage for different activities	<ol style="list-style-type: none"> 1. Identify list if machinery/activities that are also using this fuel 2. Estimate percentage breakdown of how much fuel was used for this activity (e.g. 30% was used for heavy machinery) 3. Estimated fuel usage for heavy machinery (in litre or scf) = % breakdown of fuel for heavy machinery x total amount of fuel (litre or scf) 	Note: <ol style="list-style-type: none"> 1. Litre refers to fuel usage for diesel, petrol or LPG 2. Scf refers to fuel usage for compressed natural gas
			3. Machinery' specification and running hours	Fuel usage record or invoice are not available OR Machineries are rented and was filled with unknown amount of fuel	<ol style="list-style-type: none"> 1. Identify no. of machinery used for this activity 2. Identify machineries' capacity & running hours 3. Identify average hourly fuel consumption for heavy machinery from the "Estimation Guidelines" 4. Estimated fuel usage for heavy machineries = [Estimated hourly fuel consumption based on capacity (refer table) x Running hours x No. of machinery with similar capacity] 	Please refer "Estimation Guidelines" for estimation of hourly fuel consumption (Appendix 3) For unknown heavy machineries load, please assume it is half loading

5. Guidelines for Data Collection (6/12)

A. PROCESS: WELDING & OXYGEN-CUTTING						
No.	Type of Emission Sources	Emission Sources	Potential data source(s)	Case/ Issue	Calculations/ Process	Assumptions/ Remarks
6.	Welding & oxygen-cutting	Fuel consumption	1. Fuel usage record/ inventory	Data is recorded through fuel usage inventory	Extract data (in litre or m ³) from fuel usage record/ inventory	Please use "Fuel Usage Tracking" template (Appendix 1)
			2. Invoice from fuel purchase	Fuel is used for different activities e.g. gen-sets, heavy machinery, etc) No breakdown of fuel usage for different activities	<ol style="list-style-type: none"> 1. Identify list if machinery/activities that are also using this fuel 2. Estimate percentage breakdown of how much fuel was used for this activity (e.g. 5% was used for welding & O₂-cutting) 3. Estimated fuel usage for welding & O₂-cutting (in litre or m³) = % breakdown of fuel for welding & O₂-cutting x total amount of fuel (litre or m³) 	<p>Note:</p> <ol style="list-style-type: none"> 1. Litre refers to fuel usage for carbon dioxide (shielding gas) and LPG 2. m³ refers to fuel usage for acetylene

5. Guidelines for Data Collection (7/12)

A. PROCESS: REFRIGERANTS FUGITIVE EMISSIONS

No.	Type of Emission Sources	Emission Sources	Potential data source(s)	Case/ Issue	Calculations/ Process	Assumptions/ Remarks
7.	Refrigerants fugitive emissions	i) Refrigerant capacity	<ol style="list-style-type: none"> Product catalogue Refrigeration capacity specification 	Refrigeration capacity is available	<ol style="list-style-type: none"> Extract data (in kg) from product specification on total refrigerant capacity <p>1. If you have few units of air-conditioning:</p> <p>Total refrigerant capacity (kg): Σ [No. of air-conditioning units with refrigerant type A x capacity of one unit (kg)] + [No. of air-conditioning units with refrigerant type B x capacity of one unit (kg)]</p>	Please submit data based on refrigerant type e.g. R12, R22, etc.
		ii) Refrigerant recharge volume	<ol style="list-style-type: none"> Maintenance invoices for refrigerant recharge 	There is invoice/record on recharge volume	Extract data (in kg) from invoice/record on the amount of refrigerant gas recharge	Please submit data based on refrigerant type e.g. R12, R22, etc.

5. Guidelines for Data Collection

Data Requirements for CFP

Type of Emission Sources

B. TRANSPORT (controlled vehicles):

1. Cars
2. Light good vehicles
3. Heavy good vehicles

1. **For contractors:** Any contractors' vehicles which is used for the project
2. **For SDP's Site Coordinator:** Sime Darby's vehicles (project site vehicles)

5. Guidelines for Data Collection (8/12)

B. TRANSPORT (CONTROLLED VEHICLES)

No.	Type of Emission Sources	Emission Sources	Potential data source(s)	Case/ Issue	Calculations/ Process	Assumptions/ Remarks
1.	i) Heavy goods vehicles ii) Light goods vehicles iii) Cars iv) Motorcycles	Fuel consumption	1. Fuel receipt/ invoice for the vehicle	Data is in litre or scf and fuel is used for that vehicle only	Extract data (in litre or scf) directly from receipt/invoice	
			2. Fuel receipt/ invoice for the vehicle	Data is in RM and fuel is used for that vehicle only	Convert data from RM to litre or scf, based on current fuel price: Estimated fuel usage (litre or scf) = [Fuel purchased (RM) / current fuel price (RM/litre or scf)]	Fuel prices (as at 31/12/15): i. Petrol: RM 1.95/ L ii. Diesel: RM 1.90/ L
			3. Mileage/ distance travelled by vehicles	Only distance-travelled data is available OR Fuel receipt/invoice is not available	1. Record mileage used for vehicles at the start of project (if possible, record the mileage at 1 st Jan AND 1 st July) 2. Monitor and track mileage for each activity and each vehicle 3. Consolidate mileage/ distance travelled for all controlled vehicles at the end of each reporting period (30 th June AND 31 st Dec)	

5. Guidelines for Data Collection (9/12)

B. TRANSPORT (CONTROLLED VEHICLES)

No.	Type of Emission Sources	Emission Sources	Potential data source(s)	Case/ Issue	Calculations/ Process	Assumptions/ Remarks
1.	<ul style="list-style-type: none"> i) Heavy goods vehicles ii) Light goods vehicles iii) Cars iv) Motorcycles 	Fuel consumption	4. Invoice from general fuel purchase	<ul style="list-style-type: none"> 1. Fuel receipt/invoice specifically for that vehicle is not available 2. Fuel is used for different activities as well e.g. gen-sets, heavy machineries, etc) 3. No breakdown of fuel usage for different activities, including the controlled vehicles 	<ul style="list-style-type: none"> 1. Identify list if machineries/activities that are also using this fuel 2. Estimate percentage breakdown of how much fuel was used for this activity (e.g. 30% was used for light goods vehicles) 3. Estimated fuel usage for light goods vehicles (in litre or scf) = % breakdown of fuel for light goods vehicles x total amount of fuel (litre or scf) 	<p>Note:</p> <ul style="list-style-type: none"> 1. Litre refers to fuel usage for diesel, petrol or LPG 2. Scf refers to fuel usage for compressed natural gas



5. Guidelines for Data Collection

Data Requirements for CFP

Type of Emission Sources

C. BUILDINGS:

- i. Purchased electricity
- ii. Back-up electricity generation

For SDP's Site Coordinator: Any electricity usage or generation for buildings e.g. main administrative buildings, operation office and sales gallery

5. Guidelines for Data Collection (10/12)

C. BUILDINGS: PURCHASED ELECTRICITY

No.	Type of Emission Sources	Emission Sources	Potential data source(s)	Case/ Issue	Calculations/ Process	Assumptions/ Remarks
1.	Purchased electricity	Electricity consumption (kWh)	1. TNB/ utility bills	Data is in kWh	Extract data (in kWh) directly from bills	Data is complete from 1 st to 30 th / 31 st every month
			2. TNB/ utility bills	Data is in RM	Convert data from RM to kWh based on current electricity tariff: Estimated electricity usage (kWh) = [Electricity usage (RM) / current electricity tariff (RM/kWh)]	Please refer Appendix 4 for electricity tariff (based on types)
			3. TNB/ utility bills	Record/bills are incomplete	Extrapolate data based on existing monthly bills Estimated electricity usage (kWh) = [Average electricity usage per month (kWh/mth) x (12- <i>n</i>)] + total electricity usage of <i>n</i> months <i>n</i> denotes the number of months data is available	Electricity usage does not vary substantially from month to month

5. Guidelines for Data Collection (11/12)

C. BUILDINGS: BACK-UP ELECTRICITY GENERATION

No.	Type of Emission Sources	Emission Sources	Potential data source(s)	Case/ Issue	Calculations/ Process	Assumptions/ Remarks
2.	Electricity generation	Fuel consumption	1. Fuel usage record/ inventory	Data is recorded through fuel usage inventory	Extract data (in litre or m ³) on gen-set usage from fuel usage record/ inventory	Please use "Fuel Usage Tracking" template (Appendix 1)
			2. Invoice from fuel purchase	Fuel is used for different activities e.g. gen-sets, heavy machinery, etc) No breakdown of fuel usage for different activities	<ol style="list-style-type: none"> 1. Identify list if machinery/activities that are also using this fuel 2. Estimate percentage breakdown of how much fuel was used for this activity (e.g. 20% was used for gen-sets) 3. Estimated fuel usage for gen-set (in litre or m³) = (% breakdown for gen-set x total amount of fuel) 	<p>Note:</p> <ol style="list-style-type: none"> 1. Litre refers to fuel usage for diesel 2. m³ refers to fuel usage for natural gas
			3. Machinery specification and running hours	Fuel usage record or invoice are not available	<ol style="list-style-type: none"> 1. Identify no. of machinery used for this activity 2. Identify machinery's capacity & running hours 3. Identify average hourly fuel consumption for gen-sets from the "Estimation Guidelines" 4. Estimated fuel usage for gen-set = [Estimated hourly fuel consumption based on gen-set capacity (refer table) x Running hours x No. of machinery with similar capacity] 	<p>Please refer "Estimation Guidelines" for estimation of hourly fuel consumption (Appendix 2)</p> <p>For unknown gen-set load, please assume it is half loading</p>

5. Guidelines for Data Collection (12/12)

C. BUILDINGS: STOVES

No.	Type of Emission Sources	Emission Sources	Potential data source(s)	Case/ Issue	Calculations/ Process	Assumptions/ Remarks
3.	Stoves	Fuel consumption (natural gas)	1. Fuel usage record/ inventory	Data is recorded through fuel usage inventory	Extract data (in m ³) on stove usage from fuel usage record/ inventory	Please use "Fuel Usage Tracking" template (Appendix 1)
			2. Invoice from fuel purchase	Fuel is used for different activities e.g. gen-sets, heavy machinery, etc) No breakdown of fuel usage for different activities	1. Identify list if machinery/activities that are also using this fuel 2. Estimate percentage breakdown of how much fuel was used for this activity (e.g. 40% was used for stoves) 3. Estimated fuel usage for stove (in litre or m ³) = (% breakdown for stove x total amount of fuel)	

Improving Standardized Procedure on Calculation/Estimation by BUs/ Townships & Contractors



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Fuel Usage Tracking Template

Where the fuel is stored? E.g. behind Project Site Office

Tracking is for what period? E.g. 1 - 31 Jan 19

Tracking sheet is for what type fuel?

Please make sure amount is in litres for petrol, diesel and LPG. Natural gas is in m3

What is the fuel used for? Please specify type of machinery

Sime Darby Property Carbon Footprint Project
Fuel Usage Tracking



Site Profile Information :

1) Township/Development name:	
2) Project/Phase ID:	
3) Contractor and Data owner name:	
4) Data Owner Telephone:	
5) Data Owner email:	
6) Location of fuel storage:	
7) Tracking Period:	
8) Type(s) of fuel: e.g., petrol, diesel,LPG, natural gas,etc	

No	Amount (litres / m3)	Date (dd/mm/yy) & AM /PM	Fuel for what use * (type of machineries)	Remarks

Notes: **e.g, back hoe,bulldozers, crane, generator sets,bar bending machine, forklifts*

Please ensure to submit the fuel receipt and Deliver Order (DO) together with this template

One Data Sheet per phase/Location

Fuel Consumption Estimation Guidelines for Gen-Sets (1/2)

To be used to estimate average hourly fuel consumption (litre/hour) for gen-sets

OPTION 1: Unknown Rated Power AND Load

Average hourly fuel consumption (litre/hour): **127.85 litre/hour**

OPTION 2: Known Gen-set Specification

Fuel usage for each gen-set:
$$\frac{\text{Gen-set specification (kg/min)} \times \text{Time of usage (minute)}}{\text{Density of fuel (kg/litre)}}$$

NOTE:

If density of fuel is not known, please use the following average fuel density:

- Diesel: 0.832 kg/litre
- Petrol: 0.74 kg/litre

Fuel Consumption Estimation Guidelines for Gen-Sets (2/2)

APPENDIX 2

To be used to estimate average hourly fuel consumption (litre/hour) for gen-sets

OPTION 3: Known Rated Power OR Load

Range of rated power	Average hourly fuel consumption (litre/ hour)				
	1/4 Load	1/2 Load	3/4 Load	Full Load	Unknown load
Range 1 (less than 300 kW)	11.66	18.75	26.46	34.40	22.82
Range 2 (between 300 kW and below 1000 kw)	40.38	67.54	96.58	130.47	83.74
Range 3 (1000 kW and above)	131.73	222.08	318.47	435.65	276.98
Range unknown	61.26	102.79	147.17	200.17	127.85



Fuel Consumption Estimation Guidelines for Heavy Machineries

To be used to estimate average hourly fuel consumption (litre/hour) for heavy machineries

OPTION 1: Unknown Type, Rated Power AND Model

Average hourly fuel consumption (litre/hour): **40.1 litre/hour**

OPTION 2: Known Type BUT Unknown Rated Power and Model

Type Of Machinery	Average hourly fuel consumption (litre/ hour)
Track-type Tractors	58.3
Pipelayers	16.2
Motor Grader	30.6
Skid Steer Loader, Multi Terrain Loader And Compact Track Loader	10.0
Excavator	24.8
Shovels	220.0
Wheel Tractor-scrapers	70.0
Backhoe Loaders	15.6
Forest Products	22.5
Telehandlers	11.7
Wheel Dozer And Soil Compactor	49.8
Compaction Equipment	12.1
Utility Compactor	4.4
Asphalt Pavers	15.3
Cold Planers	43.7
Road Reclaimer And Soil Stabiliser	54.0
Track Loaders	27.3
Wheel Loaders And Integrated Toolcarriers	35.5

TNB Electricity Tariff – as at 1 Jan 2018 (1/2)

APPENDIX 4

Domestic Consumer

TARIFF CATEGORY	UNIT	CURRENT RATE (1 JAN 2018)
Tariff A - Domestic Tariff		
For the first 200 kWh (1 - 200 kWh) per month	sen/kWh	21.80
For the next 100 kWh (201 - 300 kWh) per month	sen/kWh	33.40
1. For the next 300 kWh (301 - 600 kWh) per month	sen/kWh	51.60
For the next 300 kWh (601 - 900 kWh) per month	sen/kWh	54.60
For the next kWh (901 kWh onwards) per month	sen/kWh	57.10
The minimum monthly charge is RM3.00		

Source: <https://www.tnb.com.my/residential/pricing-tariffs/>



TNB Electricity Tariff – as at 1 Jan 2014 (2/2)

APPENDIX 4

Commercial Tariffs

TARIFF CATEGORY	CURRENT RATES(1 JAN 2014)
TARIFF B - LOW VOLTAGE COMMERCIAL TARIFF	
For the first 200 kWh (1 -200 kWh) per month	43.5 sen/kWh
For the next kWh (201 kWh onwards) per month	50.9 sen/kWh
The minimum monthly charge is RM7.20	
TARIFF C1 - MEDIUM VOLTAGE GENERAL COMMERCIAL TARIFF	
For each kilowatt of maximum demand per month	30.3 RM/kW
For all kWh	36.5 sen/kWh
The minimum monthly charge is RM600.00	
TARIFF C2 - MEDIUM VOLTAGE PEAK/OFF-PEAK COMMERCIAL TARIFF	
For each kilowatt of maximum demand per month during the peak period	45.1 RM/kW
For all kWh during the peak period	36.5 sen/kWh
For all kWh during the off-peak period	22.4 sen/kWh
The minimum monthly charge is RM600.00	

Source: <https://www.tnb.com.my/commercial-industrial/pricing-tariffs1/>

