


GHG Emission Calculator User Guide

- 1.Fill in Basic Information: Provide details related to the user's industry type, specific category and contact information.






Carbon Emission Calculator

 Login

*Required

Industry Type* <input type="text" value="choose"/>	Specific Industry Category* <input type="text" value="choose"/>
Company Name* <input type="text"/>	Contact Number* <small>Ex: 02-2222-2222</small> <input type="text"/>
Extension Number* <input type="text"/>	E-mail* <input type="text"/>
CAPTCHA <input type="text" value="rEHd"/>	

2. Enter the basic equipment data for estimation within user's industry, such as the quantity of LED lamps, air conditioning units, refrigerators and green energy use.

 Basic Equipment Information	
 Lighting	
Number of LED fixtures (pcs)	Number of non-LED fixtures (pcs)
<hr/>	<hr/>
 Air Conditioning	
Number of window/split air conditioners (units)	Number of packaged air conditioners (units)
<hr/>	<hr/>
Number of chiller units (units)	
<hr/>	
 Refrigerator	
Number of refrigerators (units)	Number of freezers (units)
<hr/>	<hr/>
 Green Energy Usage	
Do you have self-generated renewable energy for self-use	Do you purchase green electricity from external sources
Yes No	Yes No

3. On this page, input either the '**cost of use**' (e.g., electricity cost) or '**quantity of use**' (e.g., electricity usage) for energy/resources to estimate carbon emissions.

- "**Basic** Calculation Method - **Cost of Use**" (blue): Enter the cost of energy/resources (including electricity, water, gasoline, or diesel costs, etc.), and complete the estimation using default prices or prices set manually. If you are not familiar with carbon emission calculations, it is recommended to start with this function.
- "**Advanced** Calculation Method - **Quantity of Use**" (red): Enter the quantity of energy/resources used (including electricity consumption, water usage, gasoline or diesel usage, etc.) to estimate carbon emissions.

📄 Select Input Method


Input Method

Basic Calculation Method: Calculated based on energy/resource costs

Advanced Calculation Method: Calculated based on energy/resource usage

Confirm

4-1 In the example of "Basic Calculation Method - **Cost of Use** " (blue), the following page is divided into three sections: In "Energy/Resource Cost Calculation," "Waste Transport and Incineration Calculation," and "Wastewater Treatment Calculation."


 **Calculated Based on Energy or Resource Costs**

Electricity Cost	<input type="text"/>	NTD/Y	<input checked="" type="radio"/>	System default unit cost 3.5 NTD/kWh	<input type="radio"/> Enter unit cost manually
Water Cost	<input type="text"/>	NTD/Y	<input checked="" type="radio"/>	System default unit cost 10.1 NTD/m ³	<input type="radio"/> Enter unit cost manually
Natural Gas Cost	<input type="text"/>	NTD/Y	<input checked="" type="radio"/>	System default unit cost 11.27 NTD/ m ³	<input type="radio"/> Enter unit cost manually
Petrol Cost	<input type="text"/>	NTD/Y	<input checked="" type="radio"/>	System default unit cost 30.05 NTD/liter	<input type="radio"/> Enter unit cost manually
Fuel Oil Cost	<input type="text"/>	NTD/Y	<input checked="" type="radio"/>	System default unit cost 19,651.0 NTD/ m ³	<input type="radio"/> Enter unit cost manually
Liquefied Petroleum Gas Cost	<input type="text"/>	NTD/Y	<input checked="" type="radio"/>	System default unit cost 6,520 NTD/20 kg (barrel)	<input type="radio"/> Enter unit cost manually
Diesel Cost	<input type="text"/>	NTD/Y	<input checked="" type="radio"/>	System default unit cost 26.3 NTD/liter	<input type="radio"/> Enter unit cost manually

4-2 In the example of "Advanced Calculation Method - **Quantity of Use** " (red), the following page is divided

into four sections: "Energy/Resource Usage Calculation" , "Refrigerant Discharge Calculation," "Waste Transport and Incineration Calculation," and "Wastewater Treatment Calculation."


4-3 In "Energy/Resource Usage Calculation," you can input the total usage of energy/resources. For diesel, it is divided into mobile sources (vehicles) or fixed sources (boilers/generators).

 Calculated Based on Energy or Resource usage	
Electricity _____ kWh	Water _____ m ³
Natural Gas _____ m ³	Gasoline _____ liter
Fuel Oil _____ m ³	Liquefied Petroleum Gas _____ barrels (20 kg)
Diesel (Mobile Source) _____ liter	Diesel (Fixed Source) _____ liter

4-4 "Refrigerant Discharge Calculation" calculates greenhouse gas emissions due to refrigerant discharge. After selecting the equipment type and refrigerant type, you can enter the refrigerant charge.

Refrigerant Discharge calculation	
Item 1	
Equipment Type	Refrigerant Type
Chiller Refrigerator Air Conditioner Heat Pump Water Heater	R134a R410A R22 R32 R404a R507a R744(CO ₂)
	Type Refrigerant Charge kg
	Type Refrigerant Charge kg

5. "Waste Transport and Incineration Calculation" calculates the indirect greenhouse gas emissions from handling solid waste. You can input the weight of waste collected and select the nearest incinerator. The distance for waste collection service should be filled in based on the actual distance of waste transportation.



Waste Transport and Incineration Calculation

Weight of waste collection service

ton


Nearest incinerator

廢棄物焚化處理服務(臺南市永康垃圾資源回收(焚化)廠) ▼

Transportation emissions - distance of waste collection service (site to nearest incinerator)

km

6. "Wastewater Treatment Calculation" calculates the indirect greenhouse gas emissions from treating wastewater. If you have already filled in the water cost in the "Energy/Resource Cost Calculation," you only need to select the nearest wastewater treatment center in this option.



Wastewater Treatment Calculation

Nearest wastewater treatment center

廢(污)水處理服務(中部科學工業園區管理局-虎尾園區) ▼

7. Upon completing the above information, the results will classify the data into scopes 1 to 3, revealing the percentage of total greenhouse gas emissions for each scope. Expanding the menu shows the share of each item within that scope, with the **highest share highlighted in red** (the **carbon emission hotspot**), and allows for the results to be presented in a report or **sent via email**.



Scope 1 Emissions	Scope 1 Emissions Total	19163	kg CO ₂	Scope 1 Emissions as a Percentage of Total Emissions	3	%
Scope 2 Emissions	Scope 2 Emissions Total	495000	kg CO ₂	Scope 2 Emissions as a Percentage of Total Emissions	78.7	%
Scope 3 Emissions	Scope 3 Emissions Total	114882	kg CO ₂	Scope 3 Emissions as a Percentage of Total Emissions	18.3	%

Total Emissions **629045** kg CO₂

Scope 1 Emissions	Scope 1 Emissions Total	19163	kg CO ₂	Scope 1 Emissions as a Percentage of Total Emissions	3	%
Natural Gas	Direct Emissions	18810	kg CO ₂	Direct Emissions CO ₂ as a percentage of Total	3	%
Gasoline (Mobile Source)	Direct Emissions	0		Direct Emissions CO ₂ as a percentage of Total	0	
Fuel Oil	Direct Emissions	0		Direct Emissions CO ₂ as a percentage of Total	0	
LPG	Direct Emissions	0		Direct Emissions CO ₂ as a percentage of Total	0	
Diesel (Mobile Source)	Direct Emissions	0		Direct Emissions CO ₂ as a percentage of Total	0	
Diesel (Fixed Source)	Direct Emissions	353		Direct Emissions CO ₂ as a percentage of Total	0.1	
Refrigerant R134a	Direct Emissions	0		Direct Emissions CO ₂ as a percentage of Total	0	
Refrigerant R410A	Direct Emissions	0		Direct Emissions CO ₂ as a percentage of Total	0	
Refrigerant R22	Direct Emissions	0		Direct Emissions CO ₂ as a percentage of Total	0	
Refrigerant R32	Direct Emissions	0		Direct Emissions CO ₂ as a percentage of Total	0	
Refrigerant R404A	Direct Emissions	0		Direct Emissions CO ₂ as a percentage of Total	0	
Refrigerant R507A	Direct Emissions	0		Direct Emissions CO ₂ as a percentage of Total	0	
Refrigerant R744	Direct Emissions	0		Direct Emissions CO ₂ as a percentage of Total	0	

Scope 2 Emissions	Scope 2 Emissions Total	495000	kg CO ₂	Scope 2 Emissions as a Percentage of Total Emissions	78.7	%
Electricity	Indirect Emissions	495000	kg CO ₂	Indirect Emissions CO ₂ as a percentage of Total	78.7	%

Scope 3 Emissions	Scope 3 Emissions Total	114882	kg CO ₂	Scope 3 Emissions as a Percentage of Total Emissions	18.3	%
Upstream emissions Electricity uses	Indirect Emissions	88000	kg CO ₂	Indirect Emissions CO ₂ as a percentage of Total	14	%
Water uses	Indirect Emissions	5980		Indirect Emissions CO ₂ as a percentage of Total	1	
Upstream emissions Nature Gas uses	Indirect Emissions	5160		Indirect Emissions CO ₂ as a percentage of Total	0.8	
Upstream emissions Gasoline (Mobile Source)	Indirect Emissions	0		Indirect Emissions CO ₂ as a percentage of Total	0	
Upstream emissions Fuel Oil uses	Indirect Emissions	0		Indirect Emissions CO ₂ as a percentage of Total	0	
Upstream emissions LPG uses	Indirect Emissions	0		Indirect Emissions CO ₂ as a percentage of Total	0	
Upstream emissions Diesel uses (Mobile Source)	Indirect Emissions	0		Indirect Emissions CO ₂ as a percentage of Total	0	
Upstream emissions Diesel uses (Fixed Source)	Indirect Emissions	98.5		Indirect Emissions CO ₂ as a percentage of Total	0	
Waste Transport and Incineration	Indirect Emissions	8843.9		Indirect Emissions CO ₂ as a percentage of Total	1.4	
Wastewater Treatment	Indirect Emissions	6800		Indirect Emissions CO ₂ as a percentage of Total	1.1	