



# LCOS

Low Carbon Operating System  
Quick User Guide (QUG)

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# Why LCOS?

- We need to accelerate GHG emissions reduction
- We need to measure GHG emissions at all levels

> 250k SMEs

A carbon management platform that is accessible to all

Net-Zero

A carbon management platform to drive mitigation action

# LCOS: A Systematic and Collaborative Approach to Achieving Net Zero

# 4

## Imperative Measures towards Net-Zero Targets

### Measure

#### High Quality Carbon Measurement

- Accurate carbon activity inventory and environmental monitoring
- GHG protocol-based carbon accounting



### Plan

#### SBTi - Aligned Target Setting and Planning

- Set Science based targets
- Define and plan abatement initiatives
- Commit and comply with Science-Based targets initiative (SBTi) standard



### Reduce

#### Carbon Reduction with Energy Transition

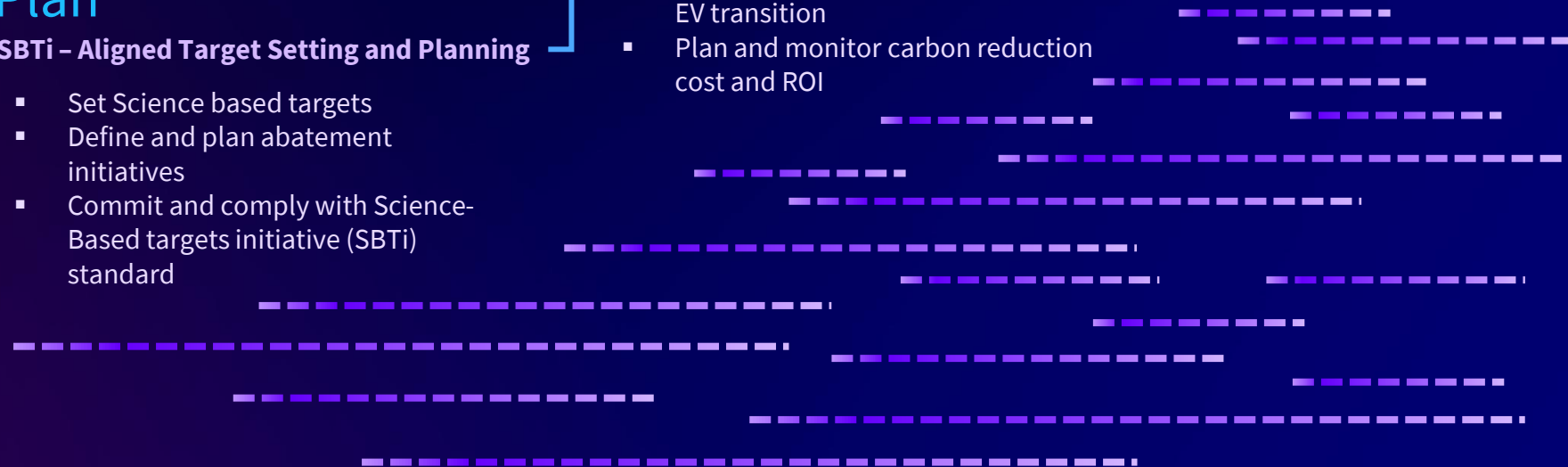
- Implement and manage abatement activities
- Integrate energy transition technologies to go green, e.g., renewable energy, energy efficiency, EV transition
- Plan and monitor carbon reduction cost and ROI



### Offset

#### Carbon Removal Management

- Manage carbon credit inventory
- Conduct carbon offset accounting
- Allocate carbon credits to the respective scope categories based on credit type



MGTC have implemented various initiative to reduce the intensity of greenhouse gas emissions, from Gross Domestic Product (GDP) by 45% by the year 2030 compared to the intensity in 2005. Among the initiatives implemented by MGTC is green initiatives to support low carbon adoption and the development of the Low Carbon Operating System (LCOS).



## **Step 1:** **Measure**

Measure Scope 1, Scope 2 and Scope 3 GHG Emissions across your entire business



## **Step 2:** **Manage**

Set targets, analyze monthly performance and benchmark against industry peers

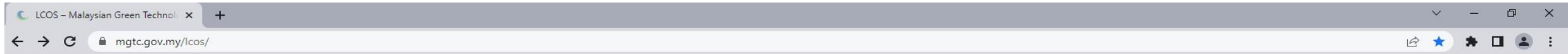


## **Step 3:** **Mitigate**

Plan and track mitigation action, purchase REC's and carbon credits



# LCOS Registration Process



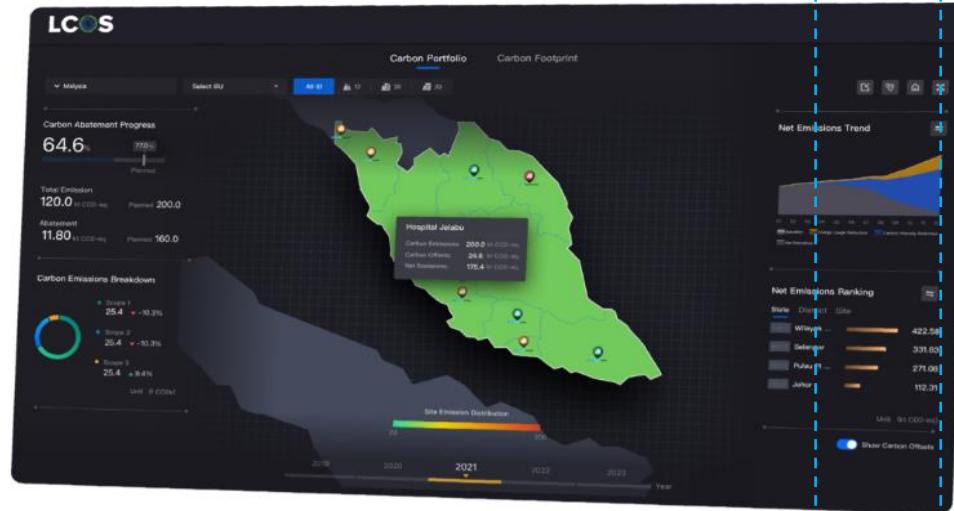
Go to MGTC's LCOS url at <https://www.mgtc.gov.my>



Resources Calculator Register Login

## Carbon management simplified!

- ✓ Measure Scope 1, 2 & 3 emissions
- ✓ GHG Protocol compliant disclosure
- ✓ Mitigate through offsets & credits



Click on Register for 1<sup>st</sup> time user

Login to LCOS EnOS platform after receiving & changing credential details



## Global standards. Local excellence.

We believe that every company has the right to have

# LCOS Registration Process

## 1 Key in your company/organization particulars

**Net Zero starts with you.**

Sign up for MGTC's Low Carbon Operating System (LCOS) to start measuring your carbon emission.

Organisation Name \*

Organisation Name

Unique Identity Number (UIN) \*

Enter UID

Admin Full Name \*

Enter Admin Full Name

Admin User ID \*

Admin User ID

Admin Corporate Email \*

Enter Email

Admin Contact Number \*

+60 Enter Contact Number

Main Address \*

Address Line 1

Address Line 2

Longitude \*

Longitude

Latitude \*

Latitude

Country \* State \* District \*

Malaysia Select State Select District

Postal Code \*

Enter Postal Code

Base Year (Y) \*

Select year

Referral Company (optional)

Select Referral Company

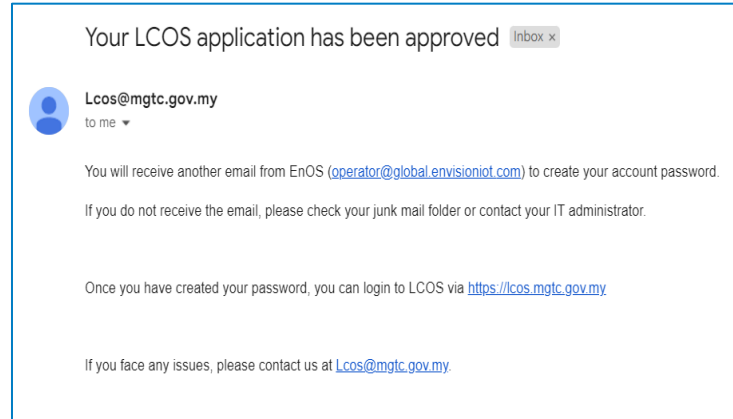
Supporting Documents \*

Click or drag file to this area to upload  
Please upload the supporting document that indicate your organisation's Unique Identity Number

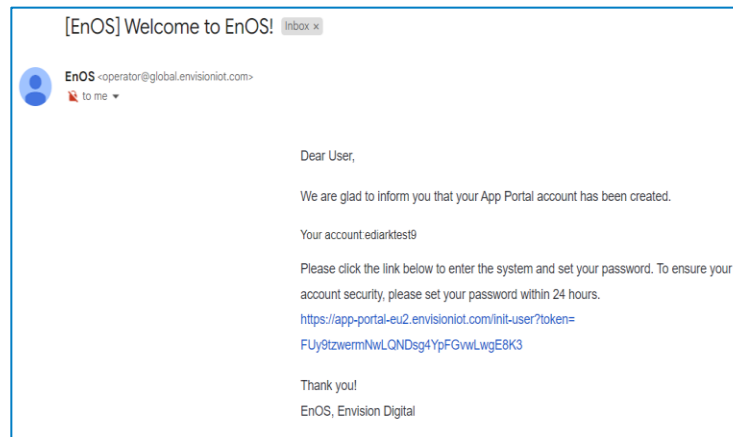
I have read and agreed to the [User Agreement](#) and [Privacy Policy](#)

I'm not a robot

## 2 MGTC to send an approval email upon review



## 3 EnOS team to email the username and LCOS app portal link



## 5 Yay!! You can now access LCOS using your new credentials!!!

EnOS

Login English ▾

Username

Enter your username

Password

Enter your password

I have read and agreed to the [User Agreement](#) and [Privacy Policy](#)

Login

[Forgot Password](#)

## 4 1<sup>st</sup> time login and change your password

Welcome!

User  
**ediarktest6**

Email  
**ediarktest6@gmail.com**

\* Set Password:

.....

\* Confirm Password:

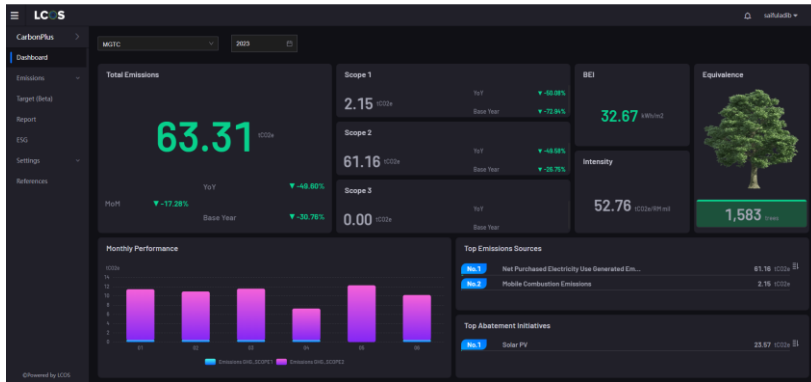
.....

Submit

7

Digital Dashboard

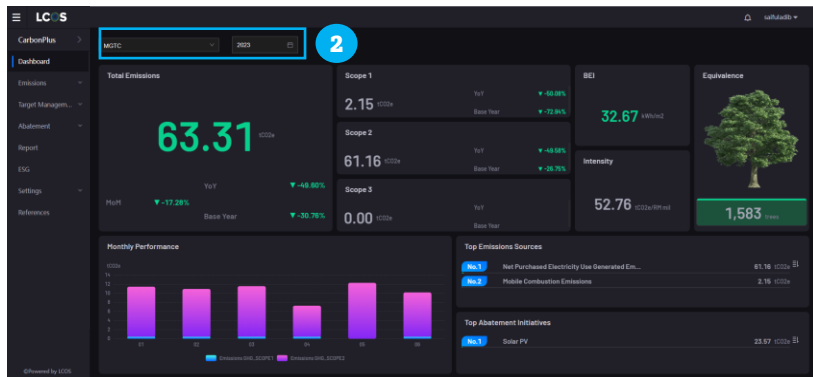
1 After logging in from the EnOS application portal, the LCOS digital dashboard will be visible with the aligned contents by MGTC



Hover around the mouse cursor towards the widgets to understand better on your GHG emissions tracking

Detail Site View

2 Click on the dropdown menu to select the desired site(s) in order to view the emissions by site basis



Total Emissions & by Scope

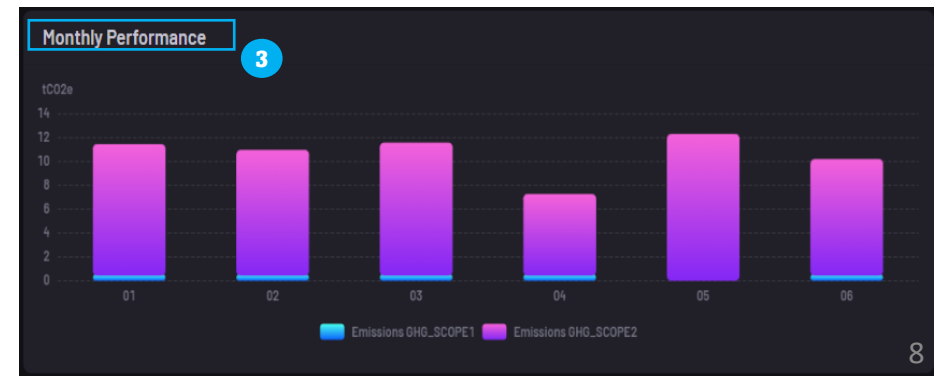
3 The DTv below shows total emissions by overall performance metrics and by scope basis. Carbon measurements are made in tCO2e



Note: MoM – Month on Month  
YOY – Year on Year

Emissions Breakdown

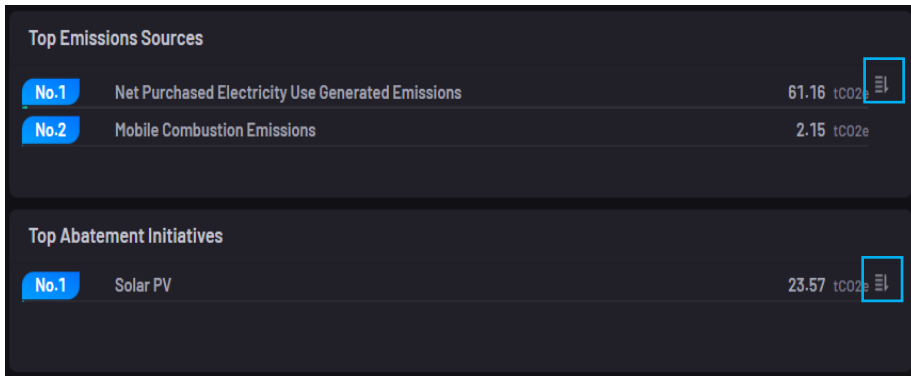
4 Monthly performance is measured by comparing between previous month and month before previous month. E.g If the month is April, this MoM will compare between March and February





Top emissions & Abatement

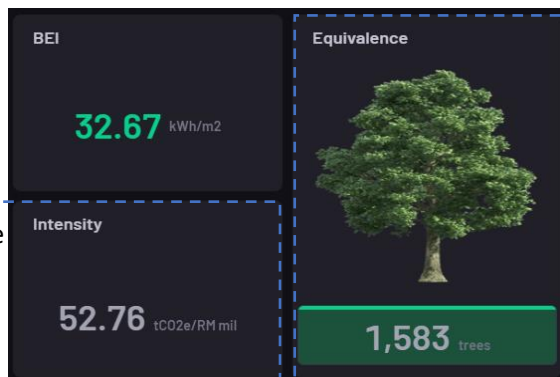
1 This DTV show both top emissions sources and abatement initiatives calculated and ranked based on the highest to lowest.



Note: You can change the ranking style from lowest to highest switching the toggle see on the image

BEI, Intensity &

2 The image below shows the Building Energy Intensity (BEI) which is referenced as the electricity consumption per meter square of the organization or Purchased electricity (kWh)/Gross Floor Area (m2)

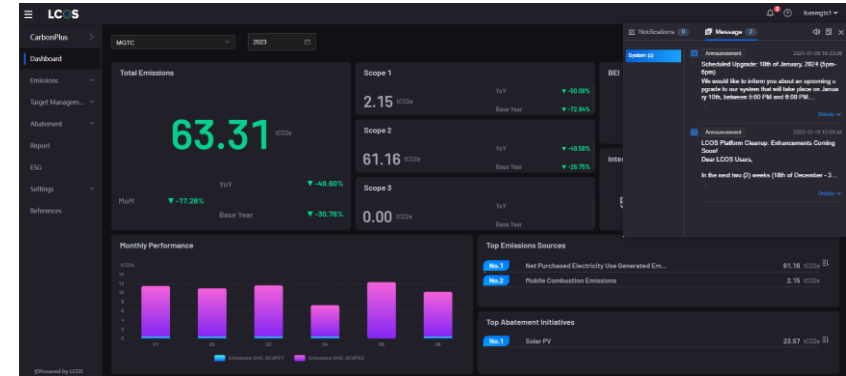


Equivalence (Total emissions equivalent to number of matured trees: 1 tree = 0.04 tCO2e) ~ 5 years of age and above

Intensity is a measure of the Total Carbon Emissions (tCO2e)/Revenue (RM mil)

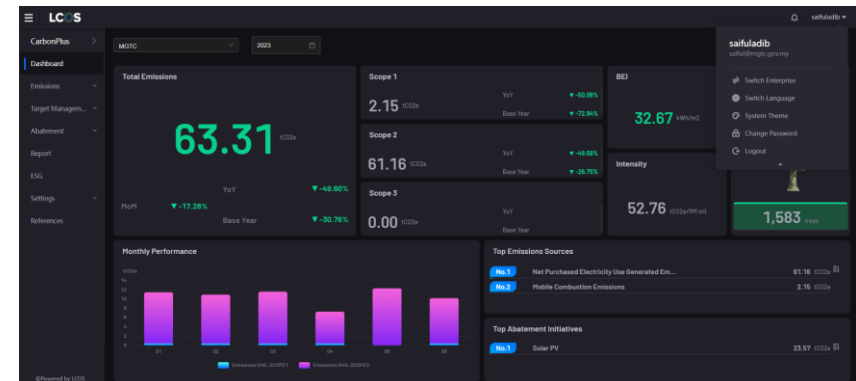
Notifications Center

3 All updates and relevant new product captures will be notified under the notifications center by clicking



General User & Theme Settings

4 With your preference of color choices, LCOS accommodates 3 color themes for the user interface. This can be done by going to Settings>>System Theme



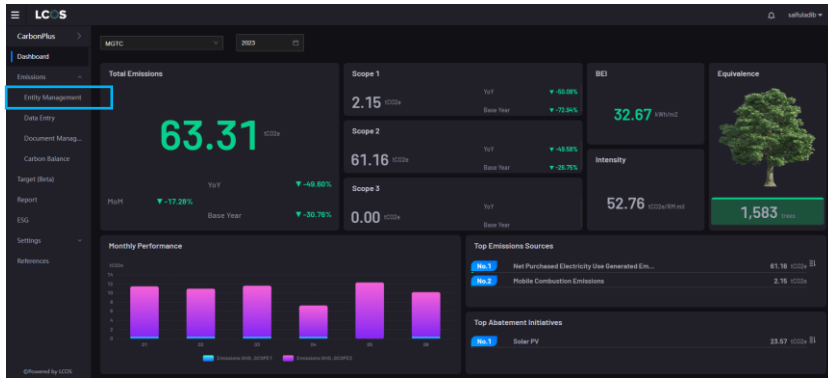
# LCOS

Emissions management is vital for organizations to measure, track, and reduce their greenhouse gas (GHG) emissions. It plays a key role in addressing climate change, meeting regulatory requirements, and demonstrating environmental responsibility.



From Main Dashboard

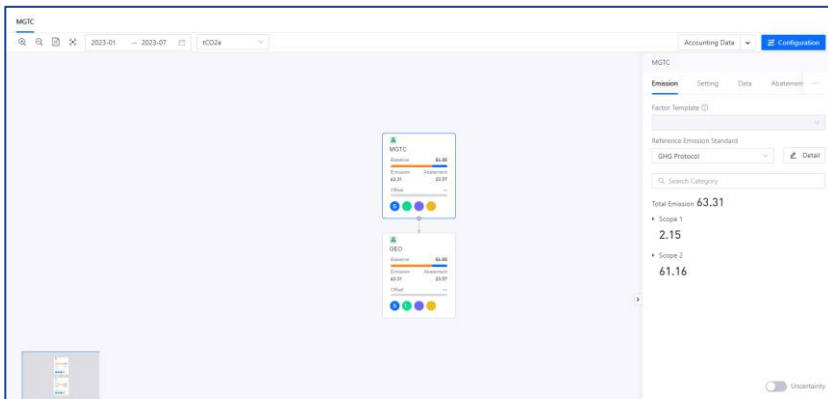
1 To access the emissions management window, click on “Emissions” tab on the LCOS CarbonPlus panel.



Here you will see 4 sub-components. They are **Entity Management, Data Entry, Document Management and Carbon Balance**.

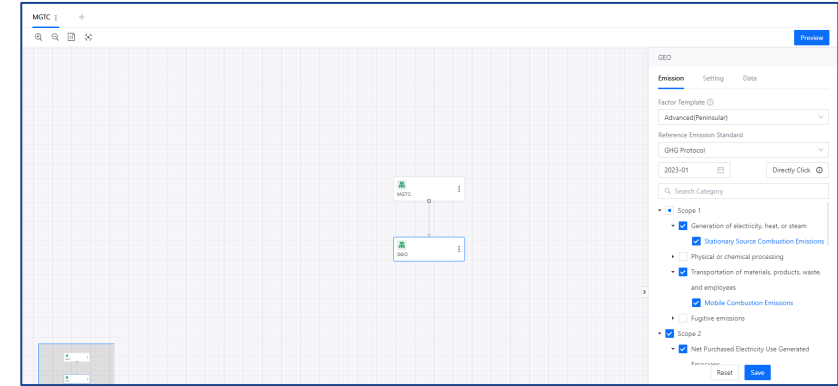
Entity Management

2 Let’s look at the 1<sup>st</sup> sub-component; Entity Management. This overlays the overall hierarchy and sites of any company or organization. Click on Configuration



Configuration Setting

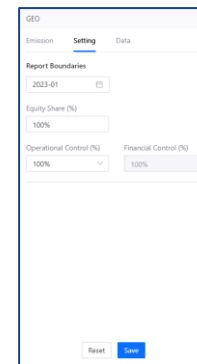
3 A skeletal view of the registered company and the sites are populated. In the skeletal view, there are 3 tabs presented. Emissions, Settings and Data



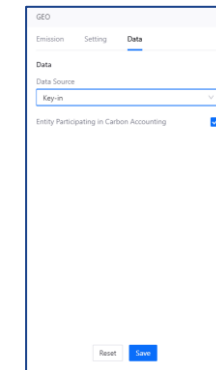
Hover around the mouse cursor towards the widgets to understand better on your GHG emissions tracking

Detail Site View

4 Let’s first look into Settings and Data as shown in the images below.



Users can input the required information on Report Boundary (year), equity share (%) with other sites and operational controls



In the Data tab, this is to select what is the main data source. There are 3 options:

- Key-In (Manual Entry)
- Aggregate (Not in Use)
- Reference (XXX)

Emissions Management

1 Before data entry for the scopes are done, in the “skeletal” view, click on the dropdown menu and select the scopes along with the desired emission components

The screenshot shows the 'Emission' tab in the 'GEO' section. It includes a 'Factor Template' dropdown set to 'Advanced(Peninsular)', a 'Reference Emission Standard' dropdown set to 'GHG Protocol', and a date field '2023-01'. Below these are search and selection options for 'Scope 1' and 'Scope 2'. Under 'Scope 1', 'Stationary Source Combustion Emissions' and 'Mobile Combustion Emissions' are checked. Under 'Scope 2', 'Net Purchased Electricity Use Generated' is checked. At the bottom, there are 'Reset' and 'Save' buttons.

a Once the dropdown menu is Clicked, select the desired site(s) to view the emissions by site basis

b Next, click on the dropdown menu to select the desired site(s) to view the emissions by site basis

c Click **“SAVE”**

Configuration Enablement

2 Next, click Preview and return to the main EM page. By selecting the main company or sites, a configuration window appears on the right. Below are 2 images known as (1) Emission and (2) Setting.

The emissions tab consist of selecting a Factor Template (Peninsular & Sabah/Sarawak) firstly.

Emissions detail by scope is seen after performing GHG accounting

The first screenshot shows the 'Emission' tab with 'Factor Template' set to 'Advanced(Peninsular)' and 'GHG Protocol' selected. The second screenshot shows the 'Setting' tab with 'Report Boundaries' at 100% and 'Basic Property' for 'COMPANY'.

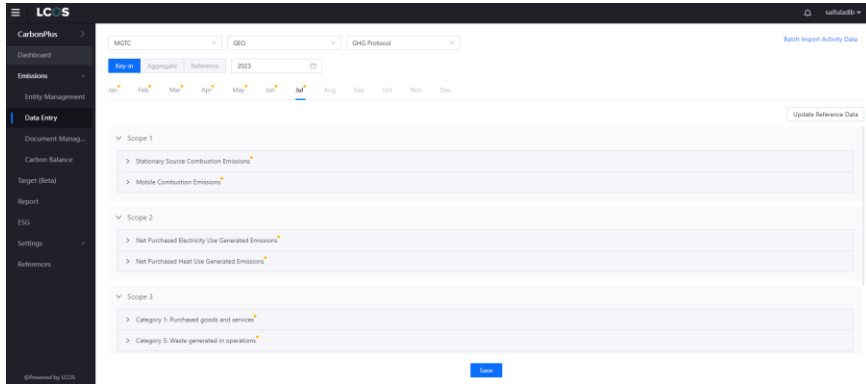
Emissions Breakdown

3 Below represents the remaining 3 tabs which are Data, Abatement and Offset. We shall look into Abatement and Offset separately in Chapter XX

The first screenshot shows the 'Data' tab with 'Solar PV (Implemented)' and a value of 23.57 / 76.44. The second screenshot shows the 'Abatement' tab with 'Solar PV (Implemented)' and a value of 23.57 / 76.44. The third screenshot shows the 'Offset' tab with 'Aggregate' and 'No Data'.

Data Entry Main Page

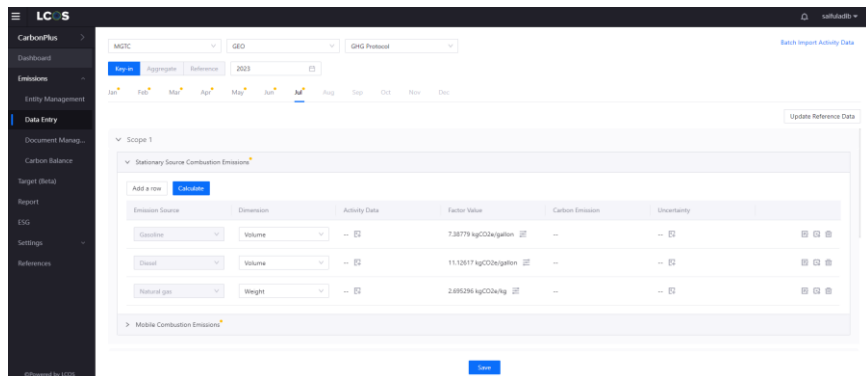
1 Next, click on Data Entry. This is a platform for users to key in their source data for the respective scopes that has been chose in the entity management page



Note: Data entry can only be done in a Site level only. By navigating the page, if the month and scope has a Amber indicator, this means that there is no data that is represented or not calculated. Green marker indicates otherwise

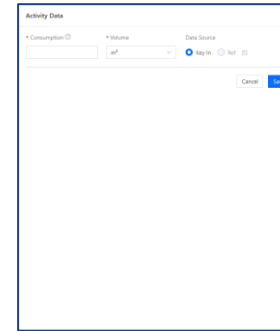
Detail Site View

2 Lets do an example. Click on the desired site. On a chosen month (e.g July), click on the Scope 1 dropdown menu. Users will experience the types of emissions preloaded as an initial example. Users can delete if the emissions are not to be in use.



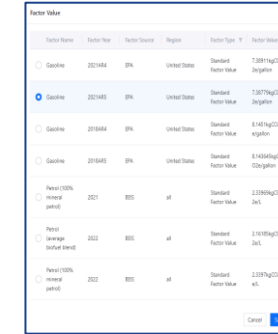
Configuration Enablement

2.1 Activity Data



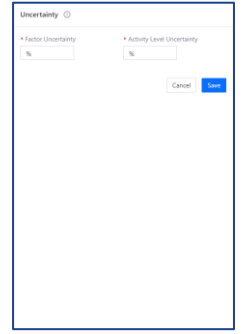
a Say Gasoline is chosen. Click on Activity data and input the consumption and volume. Click Save

Factor Value



b Next, click Factor Value and choose your desired Emissions Factor that is followed/required by your organization. Click Save

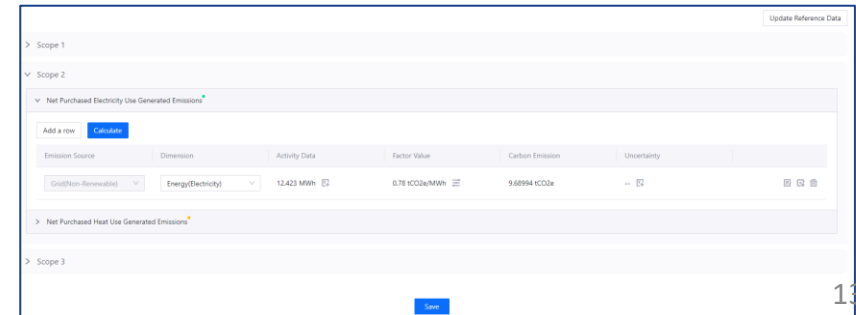
Uncertainty (Optional)



c This is an Optional input. Used if the emission has a % of variation with the original EF

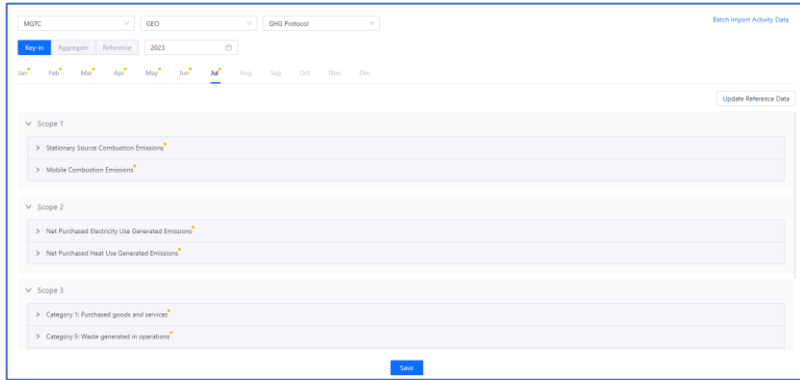
Completed Emissions Calculation

Once the data is keyed in, users can continue to add row to have additional emissions source. Otherwise, proceed to click Calculate. LCOS will compute the total carbon emissions for every source. Kindly then, click Save



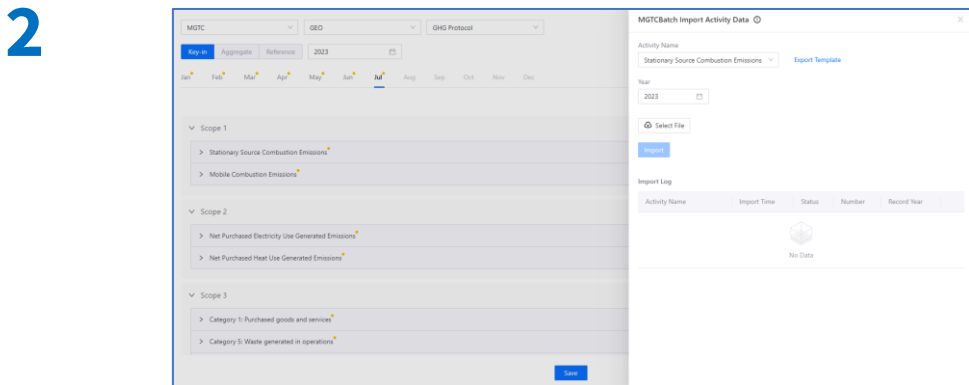
Batch Import Activity Data

1 Alternatively, if you have a range of historical data based on the defined base year, you can choose to import them by uploading in batches (yearly basis)



On the top right of the data entry page, click on "Batch Import Activity Data" to download the data input template

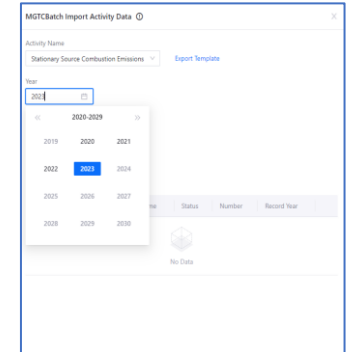
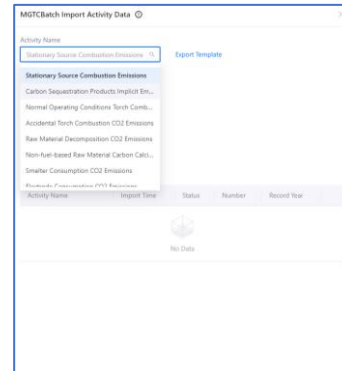
Detail Site View



Note\*\*: The templates will be populated based on the emissions selected in the entity management configuration

Configuration Enablement

2.1 Click on the dropdown menu to select the desired site(s) to view the emissions by site basis

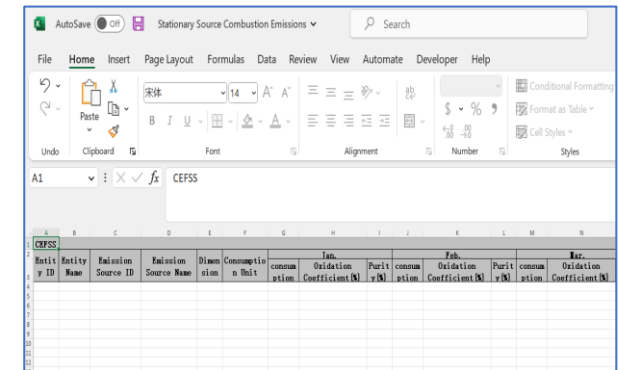


- Select the relevant activity type (Refer to Annex A for detailed explanation on various activities)

- Next, select the preferred year for the activities selected and click "Export Template"

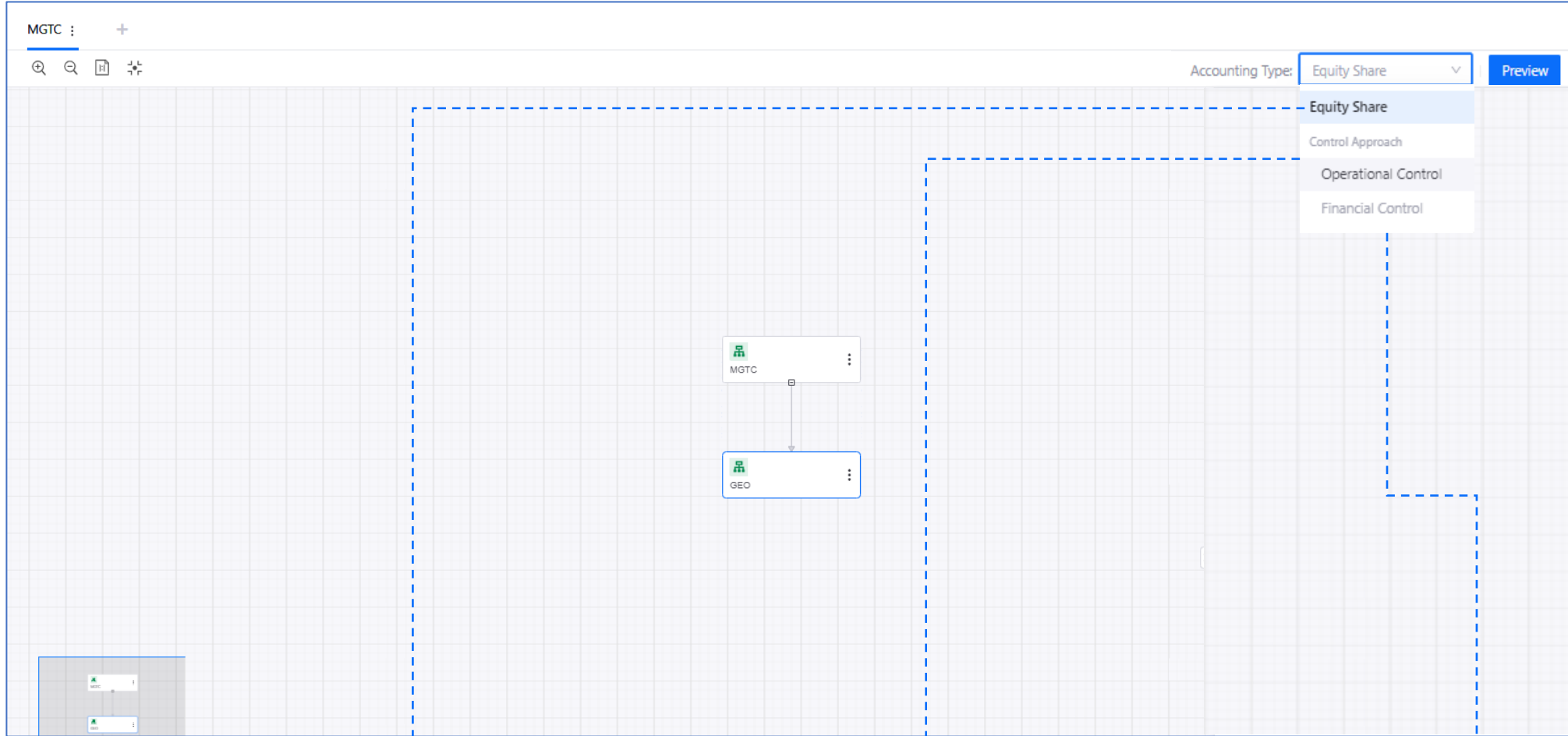
After downloading the file, populate the tabs using the activity data collected.

- To upload the excel, click on select file and locate the completed template in the file directory.
- After selecting the file, click on import to upload the file onto the web portal.
- Click on "OK".







Once the total carbon computation is completed at the **Data Entry page**, proceed once to **Entity Management** page. Click on the Accounting type and select the desired GHG accounting method that is suitable. Next, click "Preview" once again to return to the main EM page



**Equity Share Approach Accounting**  
 Under the equity share approach, a company accounts for GHG emissions from operations according to its share of equity in the operation

**Operational Control**  
 A company has operational control over an operation if the former or one of its subsidiaries has the full authority to introduce and implement its operating policies at the operation.

**Financial**  
 The company has financial control over the operation if the former has the ability to direct the financial and operating policies of the latter with a view to gaining economic benefits from its activities

In this page, click on the  to perform the selected GHG accounting. Once the computation is completed , the user will observe the completion timestamp. The total emissions computed based on the initial selected scopes and the type of GHG accounting method will be presented in the main LCOS Dashboard.

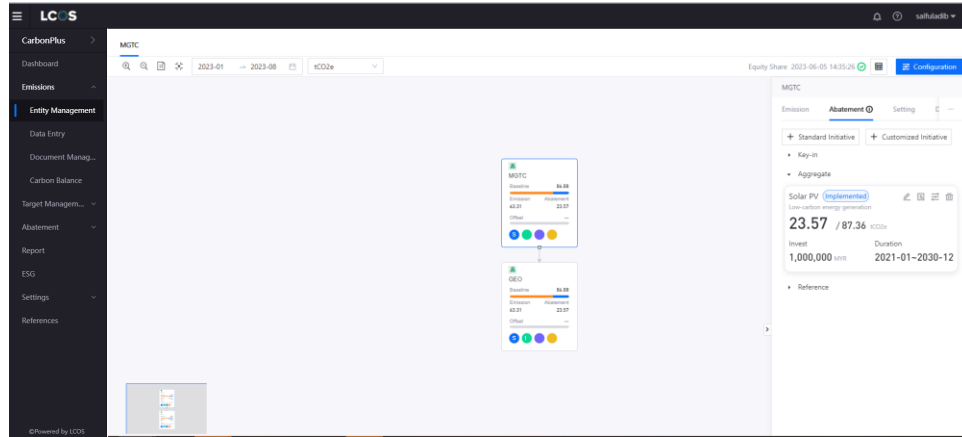
The screenshot shows the 'Entity Management' page in the LCOS system. The left sidebar lists various navigation options, with 'Entity Management' selected. The main content area displays an 'Entity List' with two entries: 'MGTC' and 'GEO', each with a 'Ref' button. Below the list, there are two summary cards for 'MGTC' and 'GEO'. Each card shows a 'Baseline' of 86.88, 'Emission' of 63.31, and 'Abatement' of 23.57. The 'Offset' is shown as '--'. Below the data, there are four colored circles (S, G, P, Y). The 'MGTC' card has a blue 'S' circle, while the 'GEO' card has a green 'i' circle. A dashed blue line connects the calculator icon in the top right of the main content area to a text box below. Another dashed blue line connects the green tick icon in the top right of the main content area to another text box below.

Equity Share Approach Accounting GHG Computation completed with a Green Tick

Once data entry is performed, press the "calculator" to perform GHG Calculation

Abatement Settings

1 To key in Abatement initiative, users will need to go to the “Entity Management” page and click the parent company block. Next on the right panel pop up, click on “Abatement”



Standard

2 Click on “Standard Initiative” and the pop-up window will appear. The default/common abatement initiative listed is Solar PV. Key in your details as per requested.

The form is titled 'Add Standard Abatement Initiative'. It contains several fields: 'Abatement Initiative Name' (with 'Solar PV' selected), 'Status', 'Invest' (with 'MYR' selected), 'Duration' (with 'Start month' and 'End month' fields), 'Abatement Initiative Category' (with a dropdown), and a 'Description' text area. There are 'Cancel' and 'OK' buttons at the bottom.

Customized

3 Similarly, if the user has a customized initiative, click on the globe icon and the Internationalization window will pop up. Users can key in based on the organization preferred abatement initiative

The image shows two overlapping windows. The background window is 'Add Initiative' with fields for 'Abatement Initiative Name', 'Status', 'Invest', 'Duration', 'Category', and 'Description'. The foreground window is 'Internationalization' with a 'Default' dropdown and radio buttons for 'Chinese (zh-CN)' and 'English (en-US)'. Both windows have 'Cancel' and 'OK' buttons.

Click “Ok” and the Abatement widget will be created under the same tab as per seen in in (4)

Quick Tip!  
Abatement Initiative examples

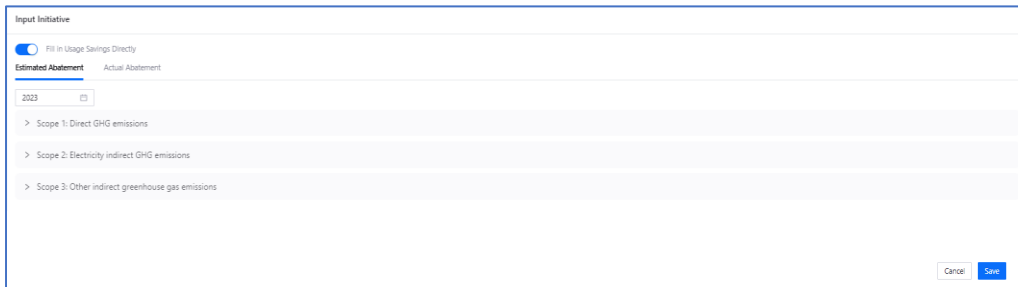
- 1 Employee commute programs encouraging sustainable transportation (EV over fossil fuel powered cars)
- 2 Installation of solar panels
- 3 Waste reduction and recycling programs
- 4 Changing building lighting systems to more efficient LED bulbs

Abatement Settings

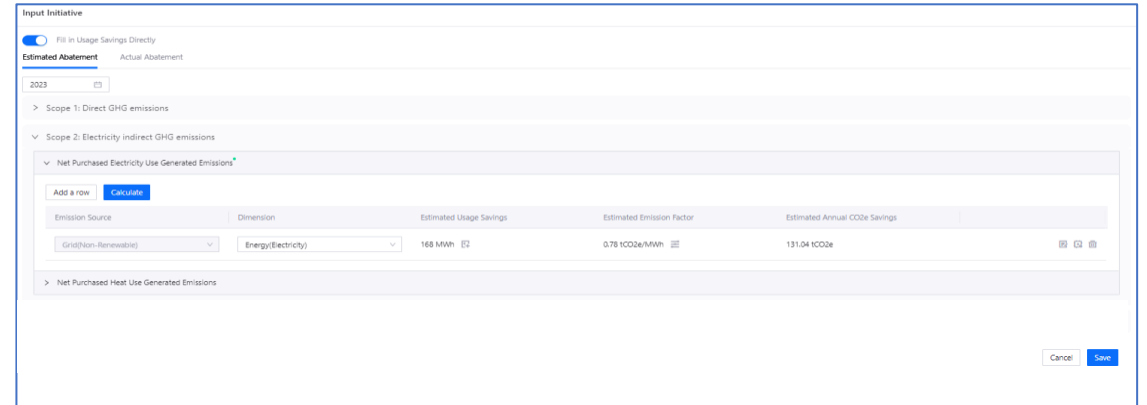
1 Once the widget is created, click on the Site level view to perform the abatement data entry. Kindly note that the abatement data entry is different compared to the emissions data entry.



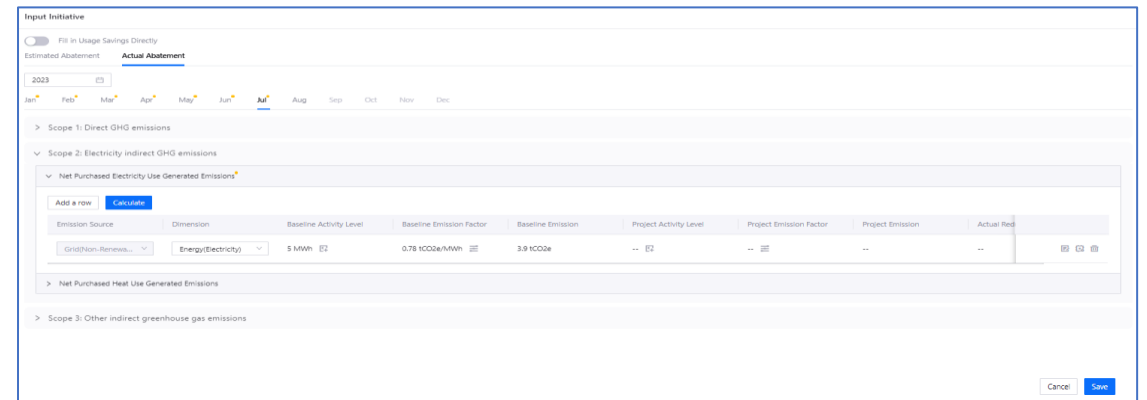
2 Once selected, users will observe the widget position will change from Aggregate to Key-in. Users now can edit this widget and to perform abatement data entry, click on [Menu Icon]



3 Click on “Standard Initiative” and the pop-up window will appear. The default/common abatement initiative listed is Solar PV. Key in your details as per requested. If the abatement initiative has not yet been implemented, fill data up under the **Estimated Abatement** tab/

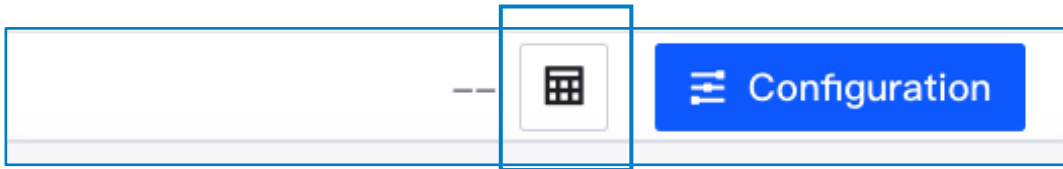



4 If your abatement initiative has been implemented and you have collected monthly emissions data, input this data under the **Actual Abatement** tab.

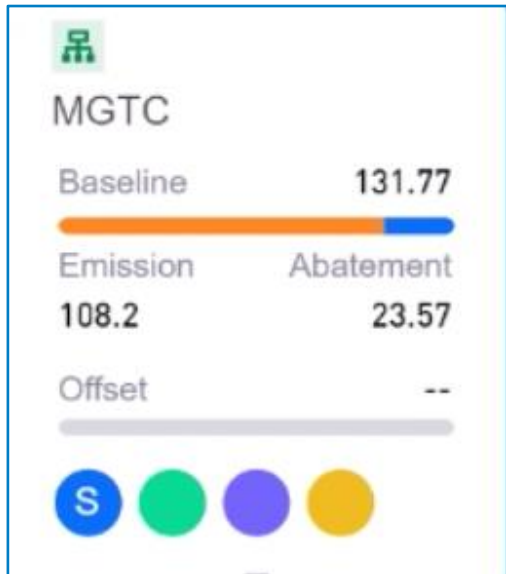


Abatement Data

**1** To preview the abatement data in the dashboard, perform data accounting by clicking on the calculator button



**2** When the data accounting is completed (signified with a ) Abatement data will be visualized as a blue rounded stacked bar within the entity card.



**3** You can browse through previously entered abatement records cards after selecting the relevant entity and the abatement tab on the right sidebar.

Abatement initiative records created within the selected entity

Abatement records aggregated from child entities connected to the selected entity.

Abatement records the system retrieves from the original reference data source

To see the document management, select “Document Management” on left menu. Select the relevant organisational entity  
 Note: This is the feature which the user can attach a reference document for the data entry column

Select the time range which document belongs to – e.g., carbon inventory report for 2022 January to 2022 December.

Select most relevant document type under the type tag. Multiple types can be selected if document falls into one or more of the following categories

Select the tag most relevant to the activity information from the document. Please refer to annex A for more explanation on the respective activity types

1. Click on “Upload Document” and a pop up will appear for materials upload.  
 2. Click on upload and select the file to upload.

Select download package to download the documents



The Carbon Balance page allows user to have an overview of the breakdown in carbon emission and reduction across its sites and emission scopes.

Carbon Balance Main dashboard



Summary section provides the following summary information across the sites selected

Business Unit, site, total emissions of that site

Site, emission category and total emissions of that category

Emission category, emission scope and total emissions across sites for that emission scope

Emission's Reduction by scope and total emissions across sites based on the abatement done



## Absolute Target Management

A yearly based target management analysis performed by organizations

1

Interactive functions to visualize preferred years of target management for Scope 1, 2 & 3 emissions

## Science Based Target Initiative (SBTi)

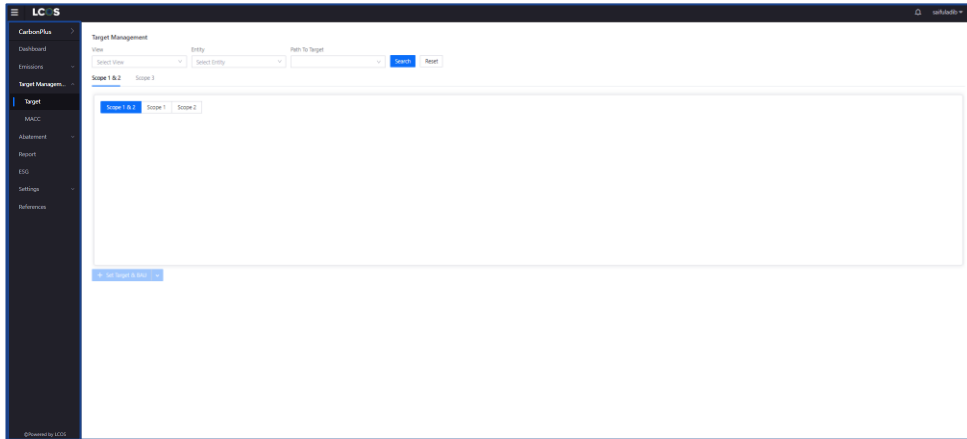
Provides organizations with a clearly defined path to reduce emissions in accordance to the Paris Agreement goals (<1.5 deg C)

2

Easy navigation to compare emissions with a few clicks!

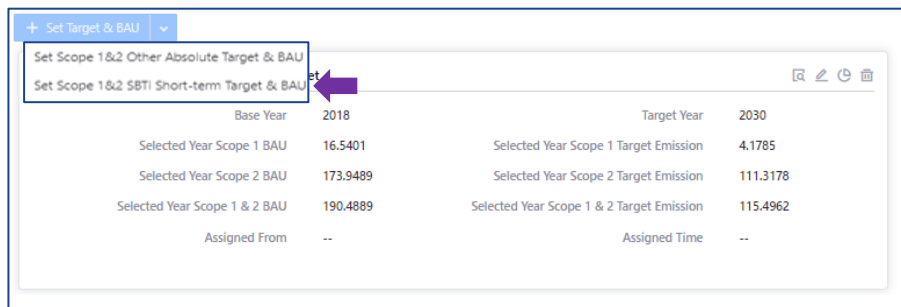
Digital Dashboard

1 After logging in from the EnOS application portal, the LCOS digital dashboard will be visible with the aligned contents by MGTC

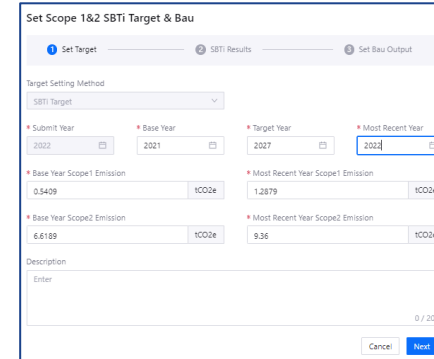


Detail Site View

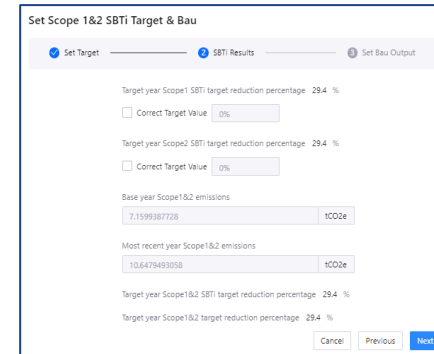
2 Click on the dropdown menu to select the desired site(s) in order to view the emissions by site basis



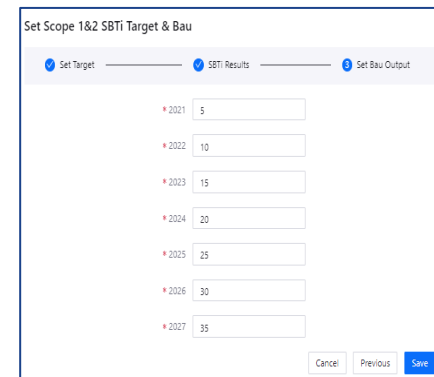
Performance Charter



1. A new window will appear for the user to key in select the desired values to set the SBTi targets.
2. Click Next to continue with the process



1. Once the initial data is keyed in, the SBTi results will perform an automatic computation for the reduction target in % for the selected emission scope.
2. Click Next for the next process to Set the BAU Output



Note\*\*: The BAU Target setting will populate based on the number of initial base year set in the previous window. The targeted values once again will base on the organisations target to exercise their net zero goals





# Why GHG Reporting Important ?

GHG reporting is critical for understanding, managing, and reducing an organization's environmental impact

01

## Enhance Reputation

Showcases an organization's commitment to environmental responsibility, enhancing its reputation and attracting environmentally conscious customers.

02

## Competitive Advantage

Embracing sustainable practices drives innovation, fostering the creation of new products and services, which can provide a competitive advantage.

03

## Improve Efficiency

Drives an analysis of energy usage, identifying inefficiencies and opportunities for cost-saving measures, promoting resource conservation.

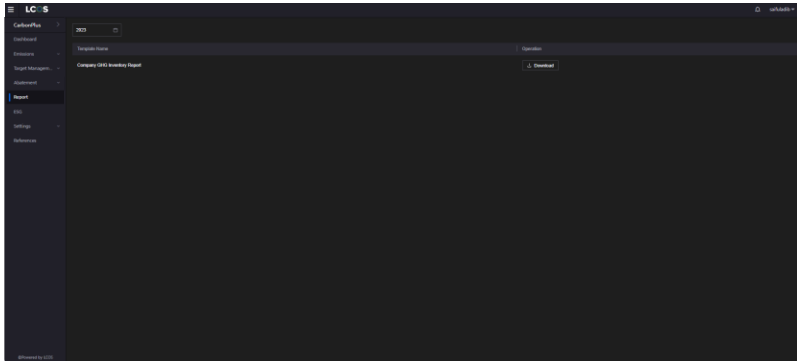
04

## Manage Risk

Identifying carbon-related risks allows organizations to mitigate potential financial and operational risks related to climate change impacts and changing regulations.

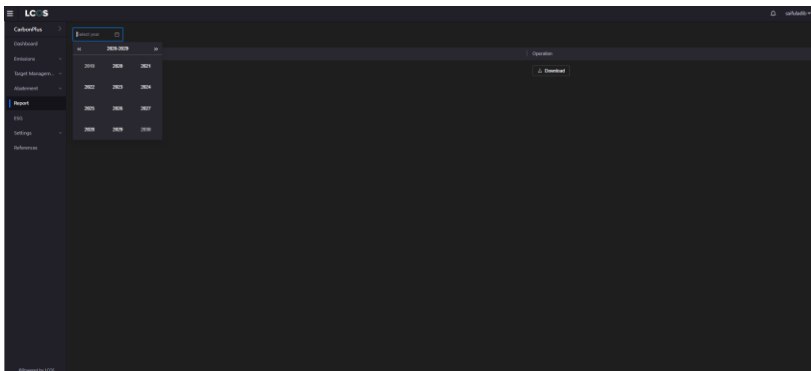
GHG Reporting Main Page

1 With a few clicks and procedures, the Report tab allows user to generate a GHG report for an organization or entity following the GHG inventory template



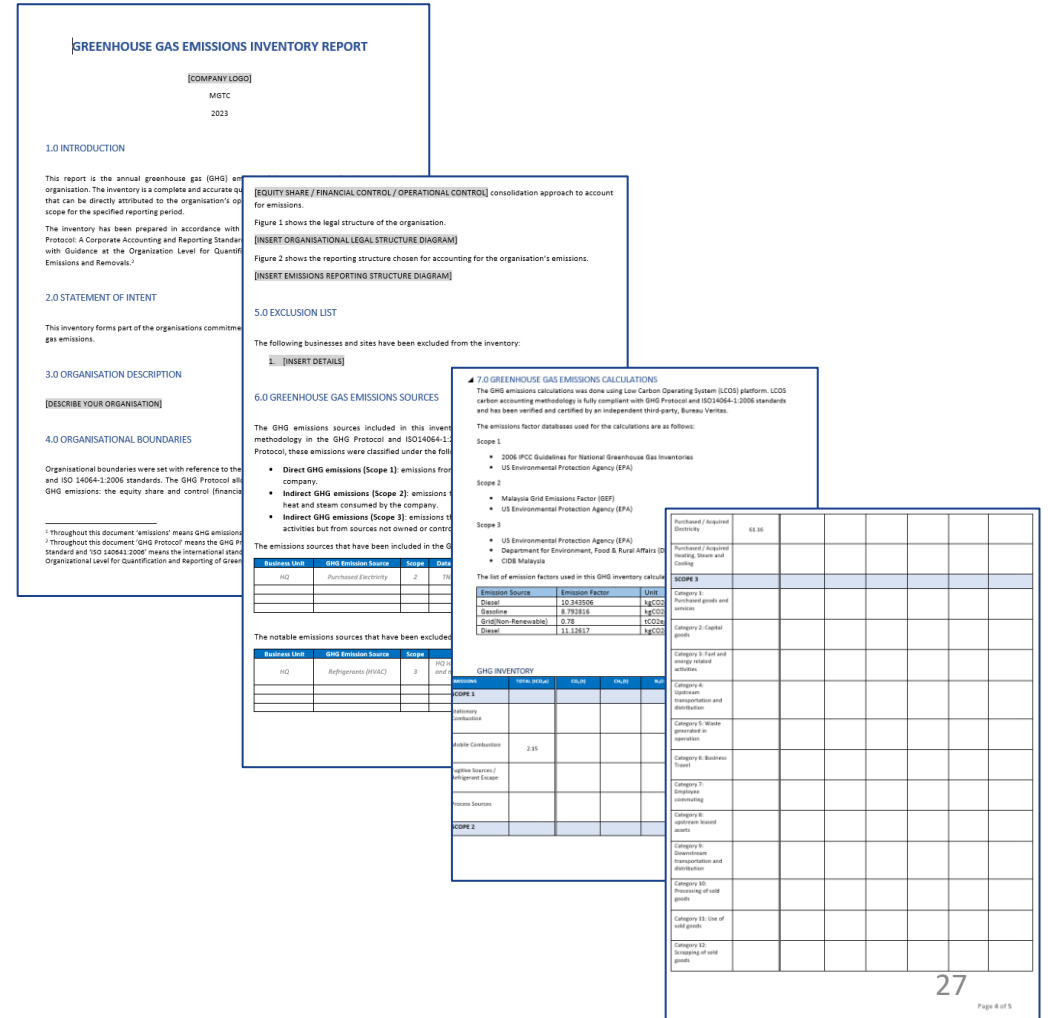
Year Selection and Download

2 Let's now download a GHG report. Click on Report and the select the desired reporting year. Next click the Download button and the GHG report will be stored in your local directory



Performance Charter

3 The downloaded report is presented in Microsoft Word Document format and some sections of the report will be filled up with data that are already entered in the system. The report can be fully amended post downloading to cater with your organization's preferences





# ESG in LCOS

ESG enhances governance practices, promoting transparency, accountability, and ethical decision-making.



**Governance**

ESG enhances governance practices, promoting transparency, accountability, and ethical decision-making.



**People**



**Planet**

ESG drives environmental stewardship, encouraging sustainable practices and reducing the organization's ecological footprint.



**Prosperity**

Embracing ESG leads to long-term prosperity by attracting responsible investors, reducing risks, fostering innovation, and maintaining stakeholder support.

- CarbonPlus
- Dashboard
- Emissions
- Target Managem...
- Abatement
- Report
- ESG
- Settings
- References

WEF SEDG

ESG Dashboard

Y Yes
N No
X Not Applicable
D Development
R Reported
V Verified
A Audited

Indicators for ESG performance selection

2023

Print feature for reporting purposes

Q1 2023

Q4 2022 Previous Quarter

Material Priority Disclosure Progress Material Priority Disclosure Progress

PILLAR 1: ENVIRONMENTAL DISCLOSURES

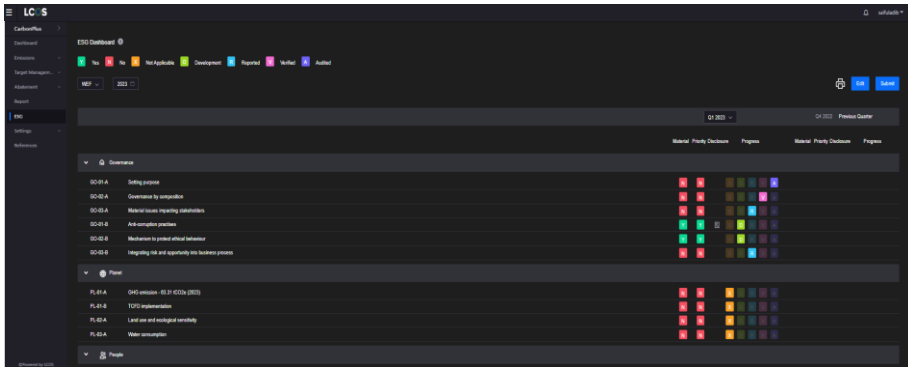
Indicator	Material	Priority	Disclosure	Progress
SEDG-E1.1 Total Scope 1 GHG emissions	N	N	X	D R V A
SEDG-E1.2 Total Scope 2 GHG emissions	N	N	X	D R V A
SEDG-E1.3 Scope 1 GHG emissions reduction	N	N	X	D R V A
SEDG-E1.4 Scope 2 GHG emissions reduction	N	N	X	D R V A
SEDG-E1.5 Total Scope 3 GHG emissions	N	N	X	D R V A
SEDG-E1.6 Scope 3 GHG emissions reduction	N	N	X	D R V A
SEDG-E2.1 Energy Consumption -Renewable fuel sources	N	N	X	D R V A
SEDG-E2.1 Energy Consumption -Non- renewable fuel sources	N	N	X	D R V A
SEDG-E2.1 Energy Consumption -Electricity	N	N	X	D R V A
SEDG-E2.1 Energy Consumption -Heating	N	N	X	D R V A
SEDG-E2.1 Energy Consumption -Cooling(If applicable)	N	N	X	D R V A
SEDG-E2.1 Energy Consumption -Steam (If applicable)	N	N	X	D R V A
SEDG-E2.2 Energy Consumption reduction -Renewable fuel sources	N	N	X	D R V A
SEDG-E2.2 Energy Consumption reduction -Non- renewable fuel sources	N	N	X	D R V A
SEDG-E2.2 Energy Consumption reduction -Electricity	N	N	X	D R V A
SEDG-E2.2 Energy Consumption reduction -Heating (If applicable)	N	N	X	D R V A
SEDG-E2.2 Energy Consumption reduction -Cooling(If applicable)	N	N	X	D R V A
SEDG-E2.2 Energy Consumption reduction -Steam(If applicable)	N	N	X	D R V A
SEDG-E3.1 Total water withdrawn - Purchased Water	N	N	X	D R V A
SEDG-E3.1 Total water withdrawn - Surfaced Water (If applicable)	N	N	X	D R V A
SEDG-E3.1 Total water withdrawn - Ground Water (If applicable)	N	N	X	D R V A
SEDG-E3.1 Total water withdrawn - Sea Water (If applicable)	N	N	X	D R V A
SEDG-E3.1 Total water withdrawn - Produced Water (If applicable)	N	N	X	D R V A
SEDG-E4.1 Total Waste - Generated	N	N	X	D R V A
SEDG-E4.1 Total Waste - Diverted from disposal	N	N	X	D R V A

Key components from the (ESG) guidelines.

ESG performance input and navigation on Quarterly basis

ESG Digital Dashboard

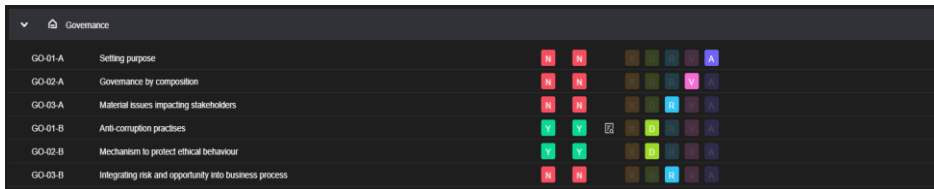
1 Click on the ESG (Environmental, Social, Governance) tab on the left panel of LCOS page and the ESG dashboard will be presented.



The ESG Dashboard comprises of key important components to measure by organizations. They are Governance, Planet, People & Prosperity based on the World Economic Forum (WEF) guidelines.

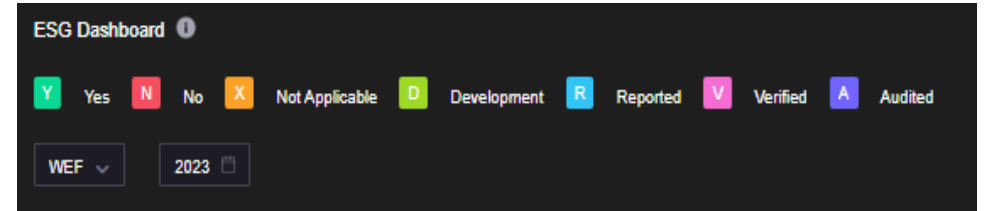
Detail Site View

2 To report on the organizations ESG growth and progress, the charter is selected through a quarterly approach. The next image will exemplify the components of the dashboard.



Performance Charter

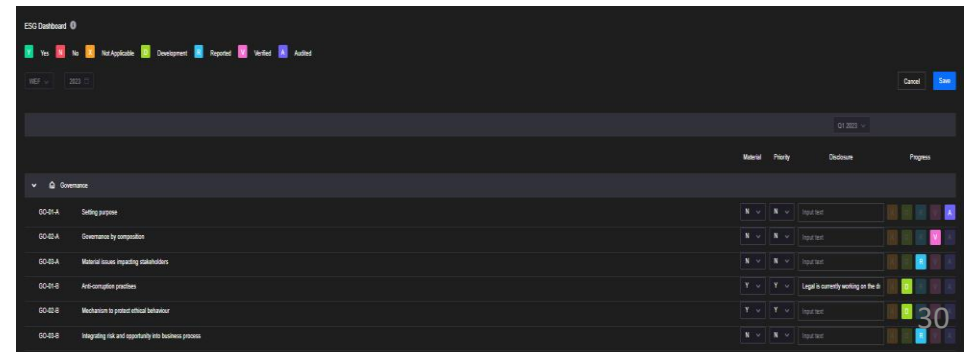
3 The coloured components seen to identify the priorities and progress are:



- a. Yes – Green
- b. No – Red
- c. Not Applicable – Amber
- a. Development – Light Green
- b. Reported – Cyan
- c. Verified – Pink
- d. Audited – Purple

Emissions Breakdown

4 Now let's edit the parameters on the dashboard. Click the "Edit" button and the user can now click to change the color components based on the organizations ESG performance.



# REC & Carbon Credit



## RENEWABLE ENERGY CERTIFICATES (REC)

Tradable, market-based instrument that represents the delivery of 1 MWh of renewable energy to the grid, and all associated environmental benefits of displacing 1 MWh of conventional power.



## CARBON CREDIT

Allow carbon emitters to offset their unavoidable emissions by purchasing carbon credits emitted by projects targeted at removing or reducing GHG from the atmosphere.

**1 Unit = 1 tonne of CO<sub>2</sub>eq**

# MALAYSIA's REC & Carbon Credit

## RENEWABLE ENERGY CERTIFICATES (REC)

As part of Malaysia's aspiration of reaching net zero GHG emissions by 2025, the government had introduced Green Electricity Tariff (GET) Programme managed by **Tenaga Nasional Berhad (TNB)**.

This programme is designed to enable electricity consumers to reduce their carbon footprint with the issuance of mREC based on an **International REC Standard (I-REC)** after the end of a calendar year.

For more information about GET: Kindly visit [MyTNB](#) and [mGATS](#).  
MREC Guideline: [Link](#)



## CARBON CREDIT



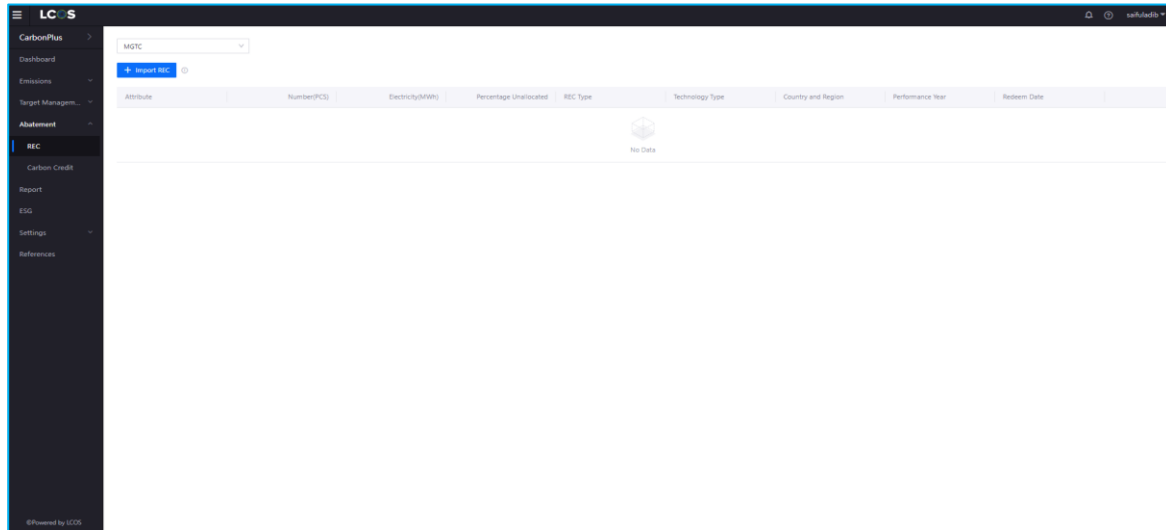
Voluntary Carbon Market (VCM) was launched by Bursa Malaysia Berhad, a platform where companies can voluntarily purchase carbon credits to offset their greenhouse gas emissions known as Bursa Carbon Exchange (BCX) with the adoption of Verified Carbon Standard (VCS) from Verra.

BCX provide a rule-based and transparent approach for both buyers and sellers to transact carbon credits, increased the accessibility and efficiency in carbon credit dealings to serve stakeholders.

For more information, kindly visit [Bursa Malaysia/VCM](#) website.  
VCM Handbook: [Link](#)

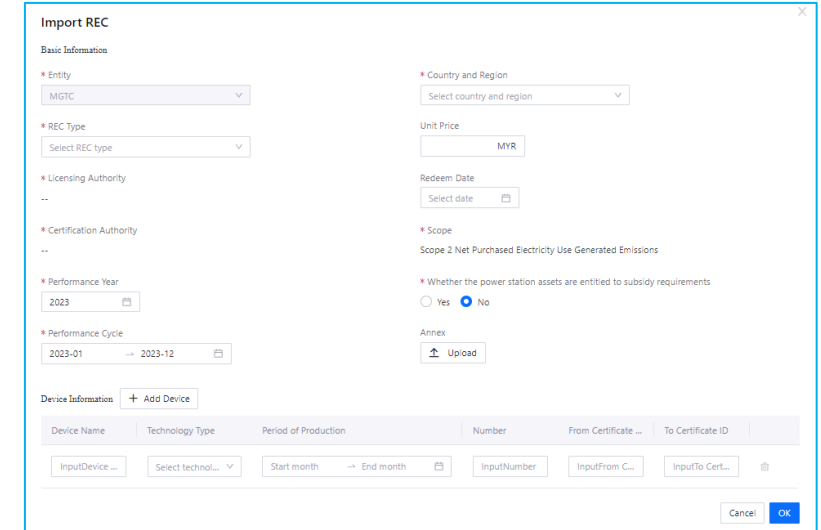
REC Landing Page

1 Click the Abatement (REC) tab on the left navigation menu to access the page.

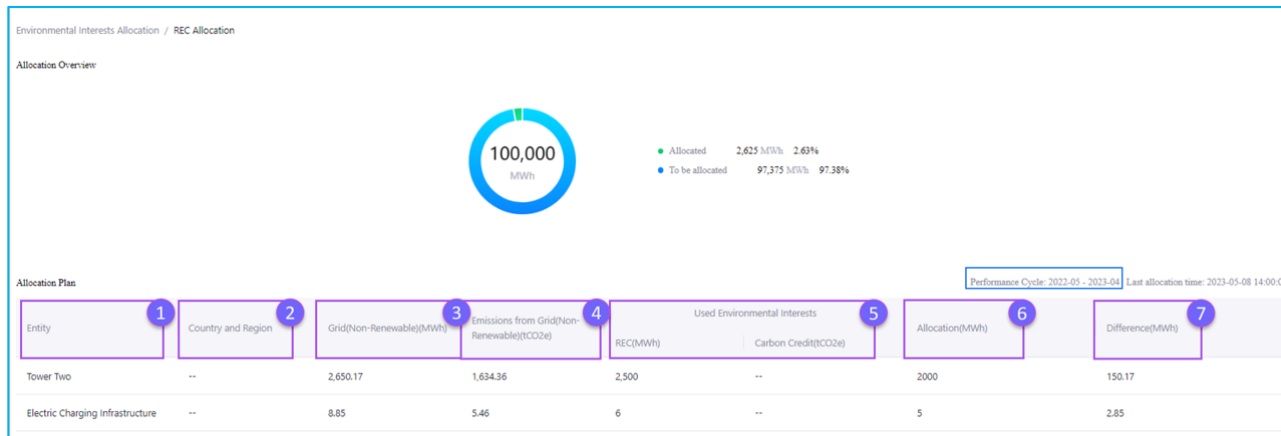


REC Landing Page

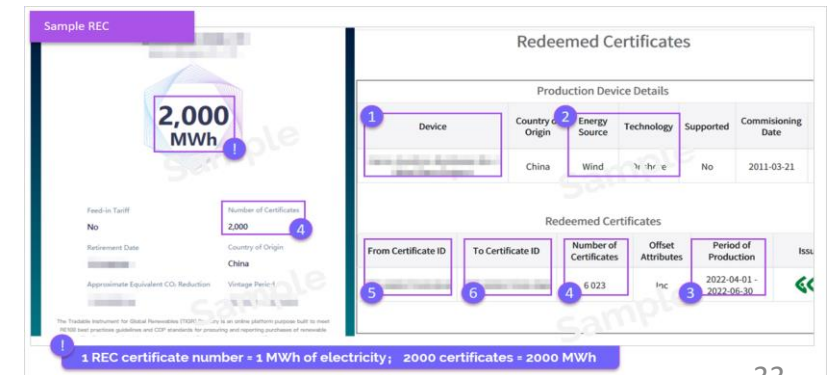
2 You may click on the Import Carbon Credit and fill in relevant information according to your certificate.



3 You may customize the REC Allocation parameters.



Note\*\*: The REC allocation information will be visualized here in this overview page





Import REC

**Import REC** ✕

**Basic Information**

\* Entity  
MGTC

\* REC Type  
Select REC type

\* Licensing Authority  
--

\* Certification Authority  
--

\* Performance Year  
2023

\* Performance Cycle  
2023-01 → 2023-12

\* Country and Region  
Select country and region

Unit Price  
MYR

Redeem Date  
Select date

\* Scope  
Scope 2 Net Purchased Electricity Use Generated Emissions

\* Whether the power station assets are entitled to subsidy requirements  
 Yes  No

Annex  
Upload

**Device Information** + Add Device

Device Name	Technology Type	Period of Production	Number	From Certificate ...	To Certificate ID
InputDevice ...	Select technol... ▾	Start month → End month	InputNumber	InputFrom C...	InputTo Cert...

Cancel OK

You may select the REC type that your organization acquired.

The year in which the renewable energy was generated and for which the REC is being issued.

Refers to the period in which a renewable energy generator can claim RECs for the electricity they generate.

Refers to the price per megawatt-hour(MWh) of renewable energy represented by the REC.

The date after which the REC can no longer be used to offset carbon emissions. For example, if a REC is issued in 2022, the redeem date may be December 31, 2022, or December 31, 2023.

You may upload your REC Certificate here as a supporting documents for reference.

The Device Information section of a Renewable Energy Certificate (REC) includes details about the renewable energy generating device that produced the electricity covered by the REC.

## REC allocation parameters

1	Entity	<ul style="list-style-type: none"> <li>Child entities with key-in data source from your chosen view.</li> </ul>
2	Country and Region	<ul style="list-style-type: none"> <li>Country and region of the displayed entity.</li> </ul>
3	Grid(Non-Renewable)(MWh)	<ul style="list-style-type: none"> <li>Shows the entity's total non-renewable grid power consumption during the specified performance cycle at the right top corner of the allocation table. This data is referenced from key-in data under the data entry page.</li> </ul>
4	Emissions from Grid (Non-Renewable)(tCO <sub>2</sub> e)	<ul style="list-style-type: none"> <li>Shows the entity's total non-renewable grid power emissions during the specified performance cycle at the right top corner of the allocation table. This data represents the converted emissions value in tCO<sub>2</sub>e from Grid(Non-Renewable)(MWh).</li> </ul>
5	Used Environmental Interests	<ul style="list-style-type: none"> <li><b>REC(MWh):</b> When in allocation mode, this value represents the cumulative sum of all previously assigned REC, excluding the current unsaved allocation in allocation textbox. After allocation is completed, this value represents the sum of the latest REC allocation and all previously assigned REC.</li> <li><b>Carbon Credit(tCO<sub>2</sub>e):</b> This value represents the cumulative sum of all assigned carbon credits in the carbon credit allocation page.</li> </ul>
6	Allocation(MWh)	<ul style="list-style-type: none"> <li>In allocation mode, input values in the text boxes to allocate REC balances to individual entities.</li> <li>In viewing mode, the values indicate the latest allocated REC values for the entity.</li> </ul>
7	Difference(MWh)	<ul style="list-style-type: none"> <li>In allocation mode, this parameter shows the amount of electricity remaining after deducting the value of used REC and allocated amount from grid electricity (Non-Renewable), indicating the grid emissions gap that must be closed to achieve zero emissions for the specified entity. You can use this as a reference for allocation amount.</li> <li>In viewing mode, this parameter shows the amount of electricity remaining after deducting the used REC from grid electricity (Non-Renewable), indicating the grid emissions gap that must be closed to achieve zero emissions for the specified entity.</li> </ul>



Import Carbon Credit

You may select the Carbon Credit type that your organization acquired.

Refers to the specific year in which the project or activity that generates the carbon credits took place.

Refers to the period of time during which a carbon credit-generating project or activity could claim carbon credits.

Refers to the Carbon Credit certification ID.

Quantity of carbon dioxide equivalent (CO2e) emissions that one carbon credit represents.

Price of one carbon credit, typically expressed in MYR.

Carbon Credit Certificate supporting documents

### Import Carbon Credit

Entity  
MGTC

\* Carbon Credit Type  
Select carbon credit type

\* Performance Year  
2023

\* Performance Cycle  
2023-01 → 2023-12

\* Certificate ID  
Input certificate ID

\* Number  
tCO2e

Unit Price  
MYR

Annex  
Upload

\* Methodology  
Select methodology

\* Mitigation Activity Type  
Select mitigation activity type

\* Country and Region  
Select country and region

Project Source  
Input project source

Licensing Authority  
Input licensing authority

\* Offset Scope  
Scope 1 & 2

Redeem Date  
Select date

Cancel OK

Type of methodology used to define how carbon emissions reductions are quantified, monitored, and verified for a specific project or activity.

Mitigation Activity Type relevant to your project (E.g. Emissions reduction, carbon removal).

Origin or type of project that generates the carbon credits.

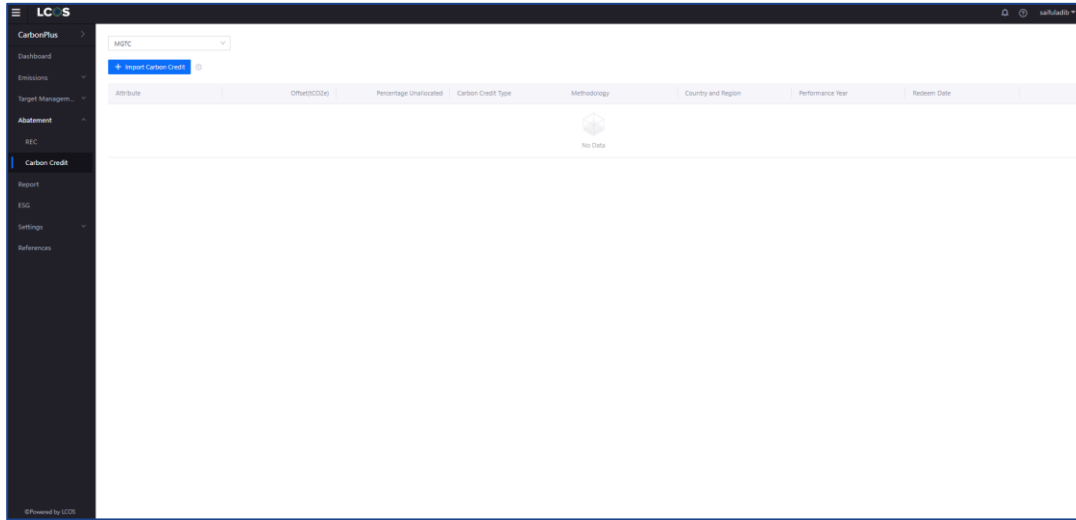
Licensed Authority to issue and regulate carbon credits.

Specific category of emissions that a carbon credit is intended to offset, E.g. Scope 1 & 2, Scope 3

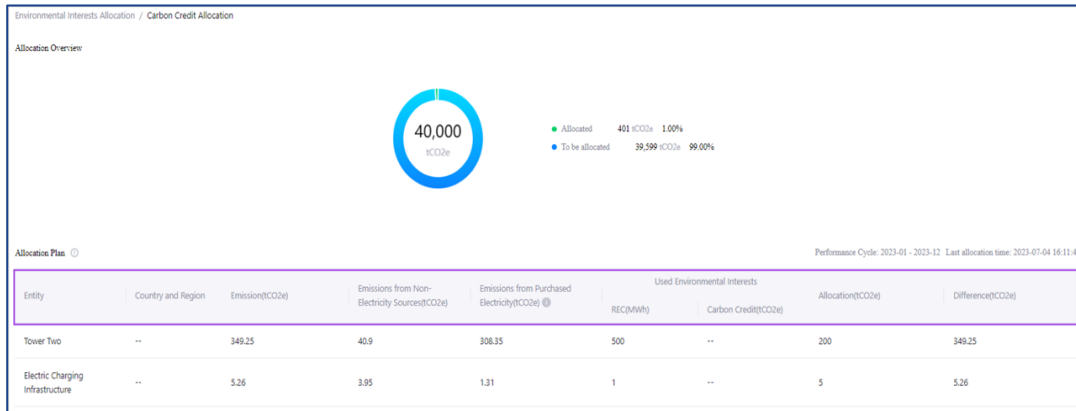
The date on or after which a carbon credit can be retired or used to offset emissions.

Carbon Credit Landing Page

1 Click the Abatement (Carbon Credit) tab on the left navigation menu to access the page.



Note\*\*: The Carbon Credit allocation information will be visualized here in this overview page



Carbon Credit Landing Page

2 You may click on the Import Carbon Credit and fill in relevant information according to your certificate.

### Import Carbon Credit

Entity: MGTC

\* Carbon Credit Type: Select carbon credit type

\* Performance Year: 2023

\* Performance Cycle: 2023-01 to 2023-12

\* Certificate ID: Input certificate ID

\* Number: tCO2e

Unit Price: MYR

Annex: Upload

\* Methodology: Select methodology

\* Mitigation Activity Type: Select mitigation activity type

\* Country and Region: Select country and region

Project Source: Input project source

Licensing Authority: Input licensing authority

\* Offset Scope: Scope 1 & 2

Redeem Date: Select date

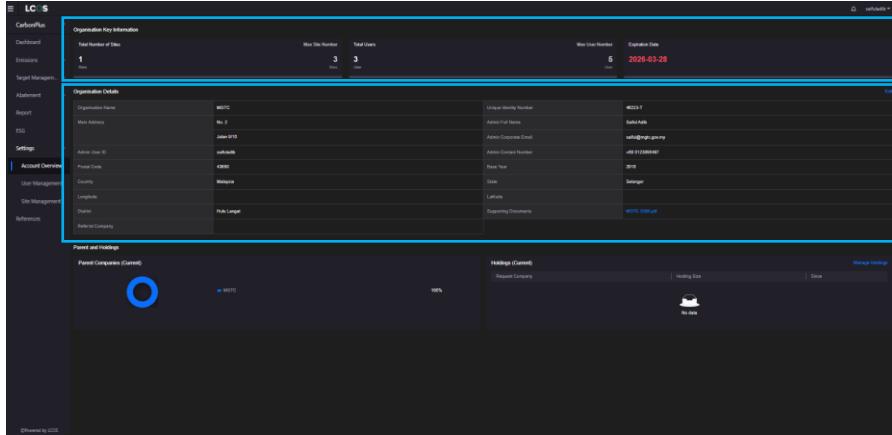
Cancel OK

## Carbon credit allocation parameters

Entity	<ul style="list-style-type: none"> <li>Child entities with key-in data source from your chosen view.</li> </ul>
Country and Region	<ul style="list-style-type: none"> <li>Country and region of the displayed entity.</li> </ul>
Emissions	<ul style="list-style-type: none"> <li>Shows the entity's total carbon emissions, which are the sum of all emissions from defined scopes, referenced from the entities' key-in data under the data entry page. This value is displayed as the emission value in the entity card.</li> </ul>
Emissions from Non-Electricity Sources	<ul style="list-style-type: none"> <li>Shows the entity's total emissions from non-electricity sources during the specified performance cycle at the right top corner of the allocation table. This data is derived by deducting scope 2 net purchased electricity emissions from total emissions.</li> </ul>
Emissions from Purchased Electricity	<ul style="list-style-type: none"> <li>Shows the entity's total emissions from purchased electricity sources during the specified performance cycle at the right top corner of the allocation table. This data derived from the sum of scope 2 Net Purchased Electricity Use Generated Emissions.</li> </ul>
Used Environmental Interests	<ul style="list-style-type: none"> <li><b>REC(MWh):</b> This value represents the cumulative sum of all previously assigned REC.</li> <li><b>Carbon Credit(tCO2e):</b> This value represents the cumulative sum of all assigned carbon credits in the carbon credit allocation page.</li> </ul>
Allocation	<ul style="list-style-type: none"> <li>In allocation mode, input values in the text boxes to allocate carbon credit balances to individual entities.</li> <li>In viewing mode, the values indicate the latest allocated carbon credit values for the entity.</li> </ul>
Difference	<ul style="list-style-type: none"> <li>This parameter shows the remaining emissions after deducting Carbon Credit(tCO2e) value from Emissions(tCO2e), indicating the remaining emissions gap required to offset to achieve zero emissions for the specified entity.</li> </ul>

Account Overview

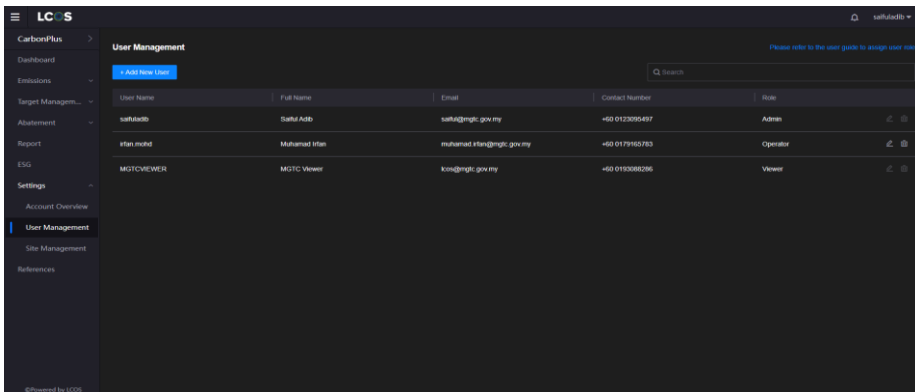
1 Upon clicking the settings tab, there are 3 components. Let's look at Account Overview. This page summarizes the information provided during the initial registration on the LCOS website.



Additionally, it also reflects the total number of sites the user creates for the organizations, number of provisioned users and portal expiry dates

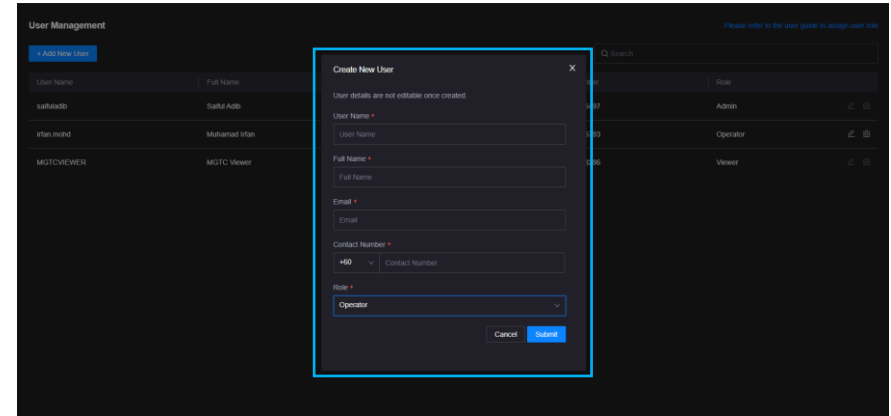
User Management

2 Next tab is to explore is "User Management". Here the administrator can start adding users of 2 profiles (i) Operator (ii) Viewer. The number of user creation to the portal is unlimited.



Performance Charter

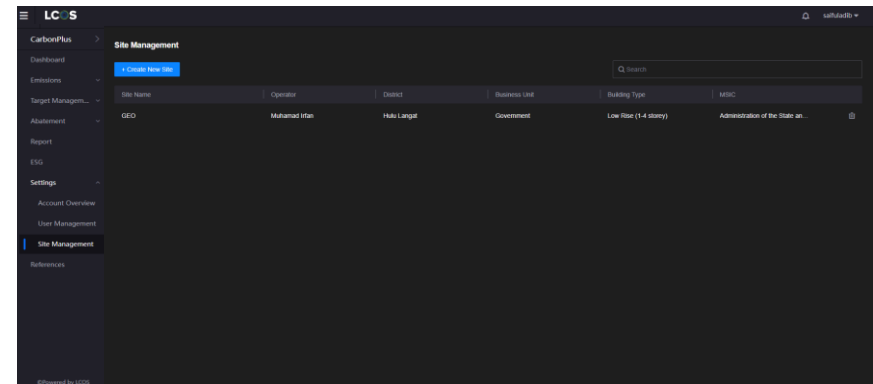
3 The process of creating user is much similar to the first time user registration but much simplified. 2 main profiles can be assigned; (i) Operator (ii) Viewer



Note: Once the submission is done, the new user will receive a confirmation email from the EnOS team with a link to change their credentials

Site Management

4 Once the user creation is done, the next step is to create the sites/assets. Click "Create New Site" and fill up the required information as seen in the next page



## Basic Information

1 Basic Information | 2 Site Management | 3 Building details

Site Name \*  
GEO-HQ2

Business Unit \*  
Government

Longitude \*  
233.4567

Latitude \*  
59.51276

Address \*  
No 7, Jalan Hijau, 2-5  
Persiaran Teknologi Hijau

Postal Code \*  
56000

Country \*  
Malaysia

State \*  
Wilayah Persekutuan

District \*  
Kuala Lumpur

Local Authority \*  
Dewan Bandaraya Kuala Lumpur

[Next Step](#)

Key in the site details and do ensure the information is accurate. This will allow the system to compute the Building Energy Intensity (BEI) correctly to the main dashboard

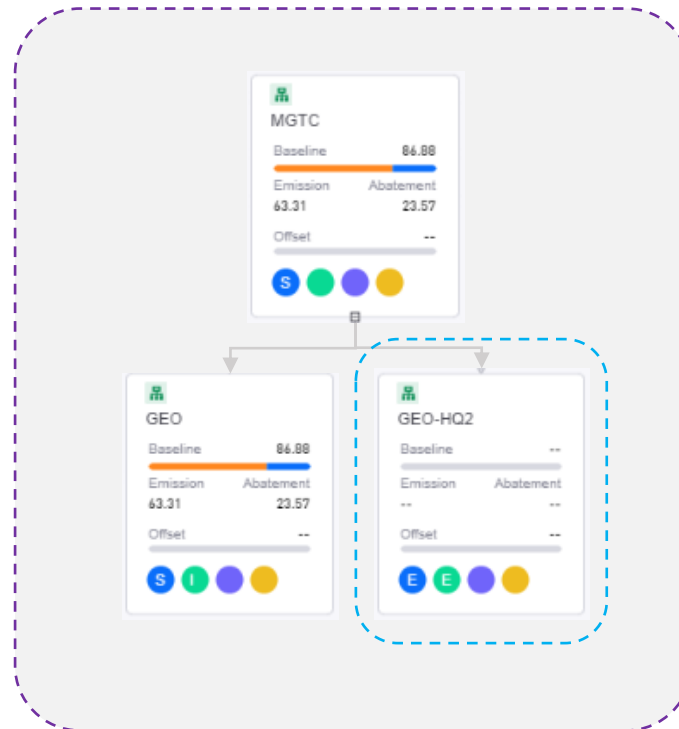
## Site Manager

1 Basic Information | 2 Site Management | 3 Building details

Operator \*  
John Tan

[Back](#) [Next Step](#)

Click “Next Step” to assign the Operator of the site and then once again, hit the “Nest Step” button



Yay!!! A new site is now created. Users can visualize the sites both from the Site Management tab and the Entity Management tab

## Building Details

1 Basic Information | 2 Site Management | 3 Building details

Gross Floor Area(sqsm) \*  
300

Net Floor Area(sqsm) \*  
250

Air Conditioned Area(sqsm) \*  
100

No. of Occupants  
25

HVAC System Type  
Air Cooled

Industry Sector  
Industry Sector

Site Establishment Year  
2023

Building Type  
Office

Electricity Tariff  
C1

Age of Building  
3

Operating Hours  
5 Days 8hrs

Certified Energy Manager  
John Doe

EMGS Certification Level  
1

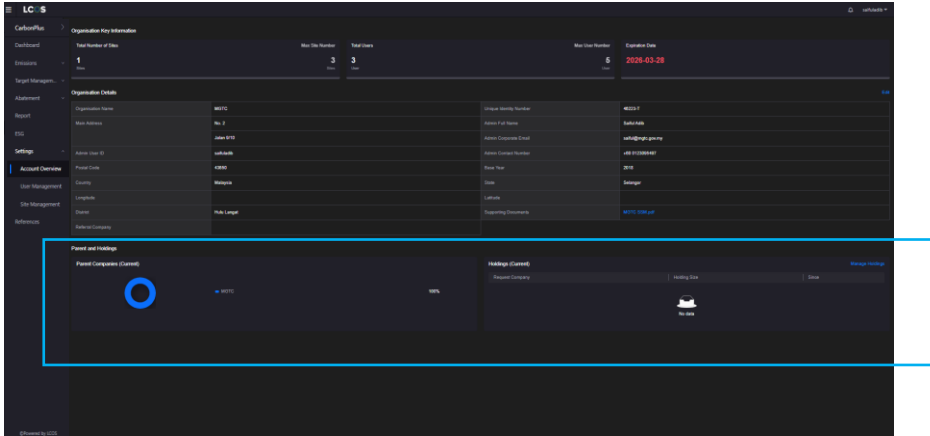
[Back](#) [+ Create New Site](#)

Fill in all the required information under building details and the details having the \* column is compulsory. Once done, click on “Create New Site”



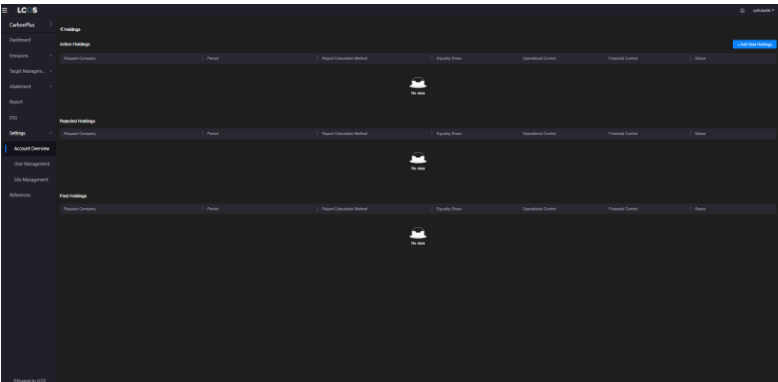
Holdings Panel

1 In the Company Management tab, a new feature has been incorporated in known as Parent and Holdings. This feature can only access by the Company Administrator. Primary purpose of this feature is to ensure the carbon reduction % in the organization subsidiaries are delegated and monitored for a given time frame.

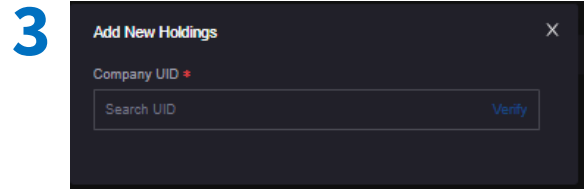


User Management

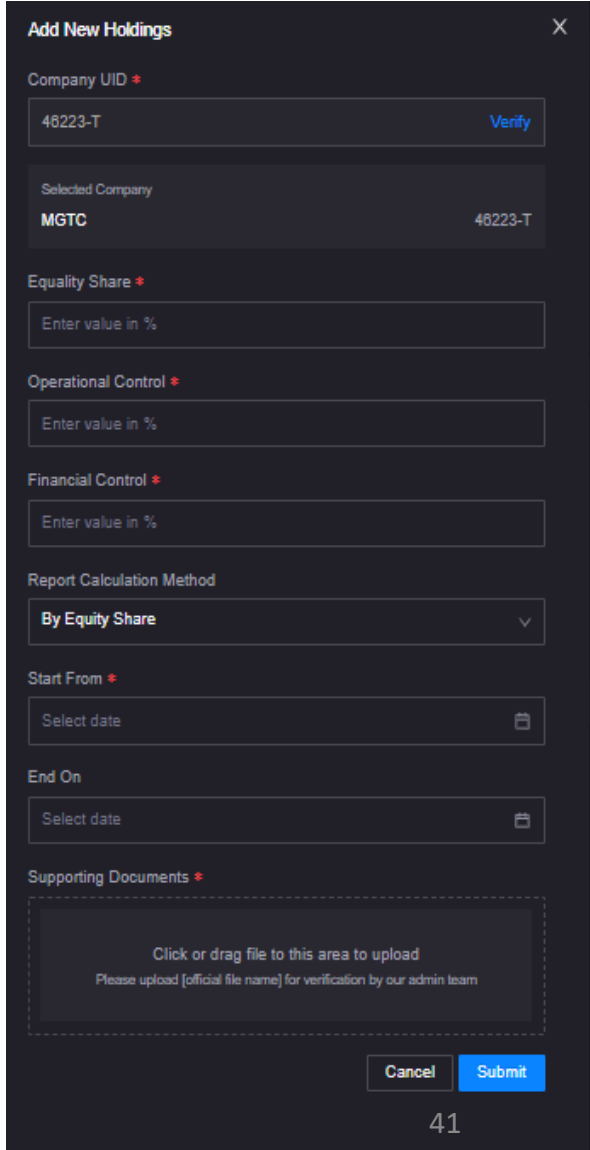
2 Click on the dropdown menu to select the desired site(s) in order to view the emissions by site basis



Performance Charter



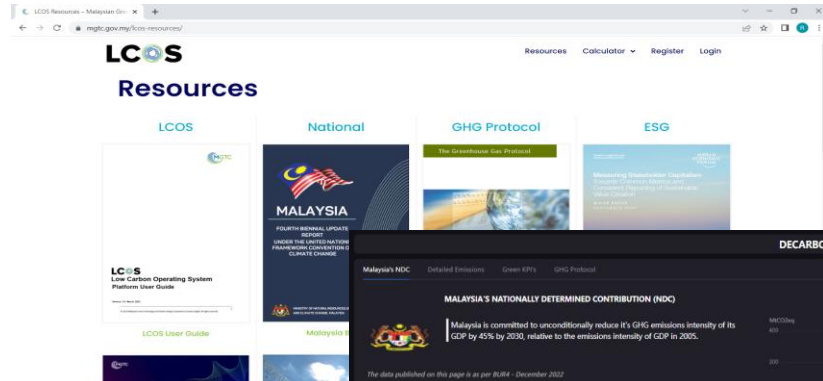
Select your company registration number and click "Verify"



Continue to insert and populate the necessary details according to your allocated %'s aligned by your organization

We have provided a Resources tab on the official LCOS website, for you to access relevant documents for references.

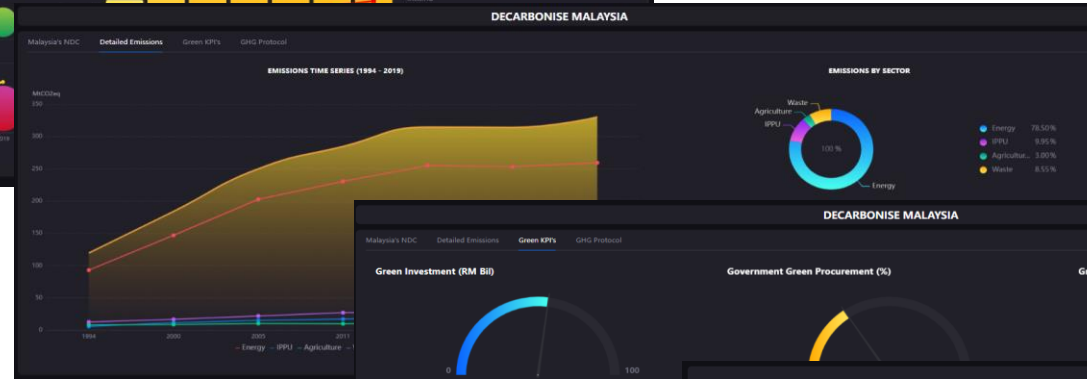
Reference Materials



Main Resource Page from the Official LCOS Website



Malaysia's Pledge towards Sustainability Goals



Malaysia's Emissions Breakdown



Malaysia's Green KPIs

GHG Protocol

**GREENHOUSE GAS PROTOCOL**

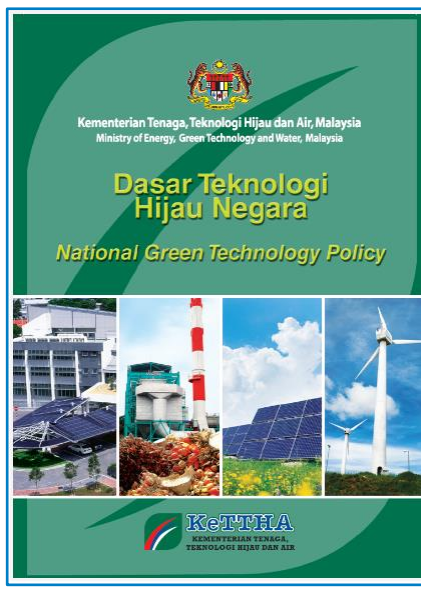
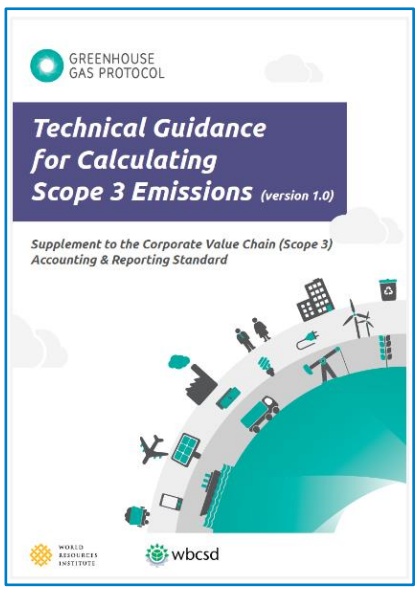
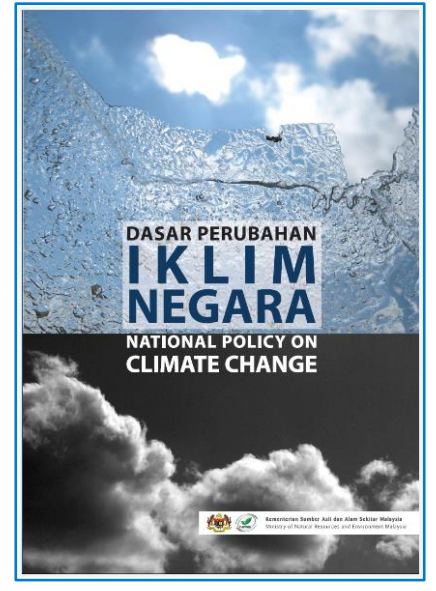
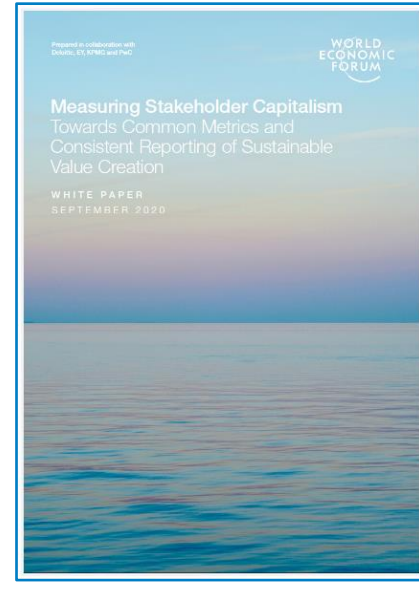
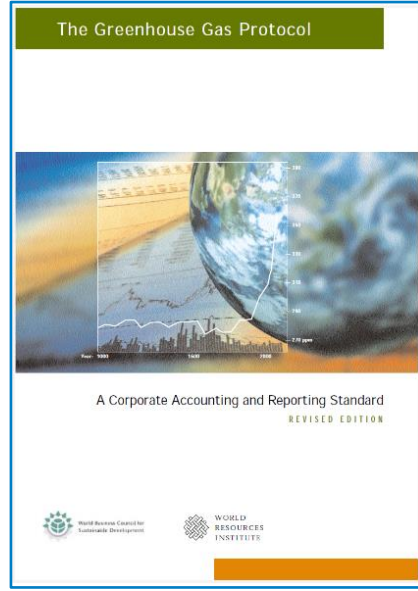
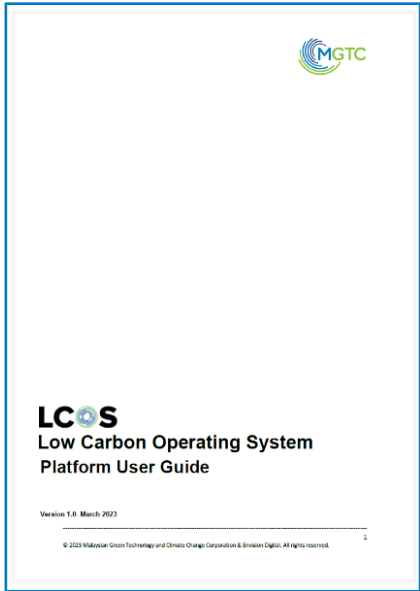
GHG Protocol is the global standard framework to measure and manage greenhouse gas (GHG) emissions from private and public sector operations, value chains and mitigation actions.

**Scope 1**  
 Scope 1 emissions are direct greenhouse (GHG) emissions that occur from sources that are controlled or owned by an organization (e.g., emissions associated with fuel combustion in boilers, furnaces, vehicles).

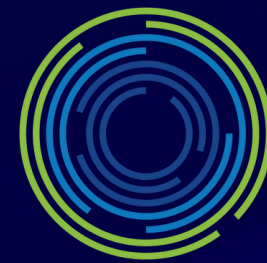
**Scope 2**  
 Scope 2 emissions are indirect GHG emissions associated with the purchase of electricity, steam, heat, or cooling.

**Scope 3**  
 Scope 3 emissions are all indirect emissions (not included in scope 2) that occur in the value chain of the reporting company, including both upstream and downstream emissions.

- Purchased goods and services
- Capital goods
- Fuel and energy related activities
- Upstream transportation and distribution
- Waste generated in operations
- Business travel
- Employee commuting
- Upstream leased assets
- Downstream transportation and distribution
- Processing of sold products
- Use of sold products
- End-of-Life treatment of sold products
- Downstream leased assets
- Franchises
- Investments



<https://app-portal-cn5.envisioniot.com/docs/oneark/en/2.0/about/about.html>



# Start your journey today.

If you have any questions or require assistance, please feel free to reach out to us.



EMAIL

[lc0s@mgtc.gov.my](mailto:lc0s@mgtc.gov.my)



WEBSITE

[www.mgtc.gov.my/lc0s](http://www.mgtc.gov.my/lc0s)



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