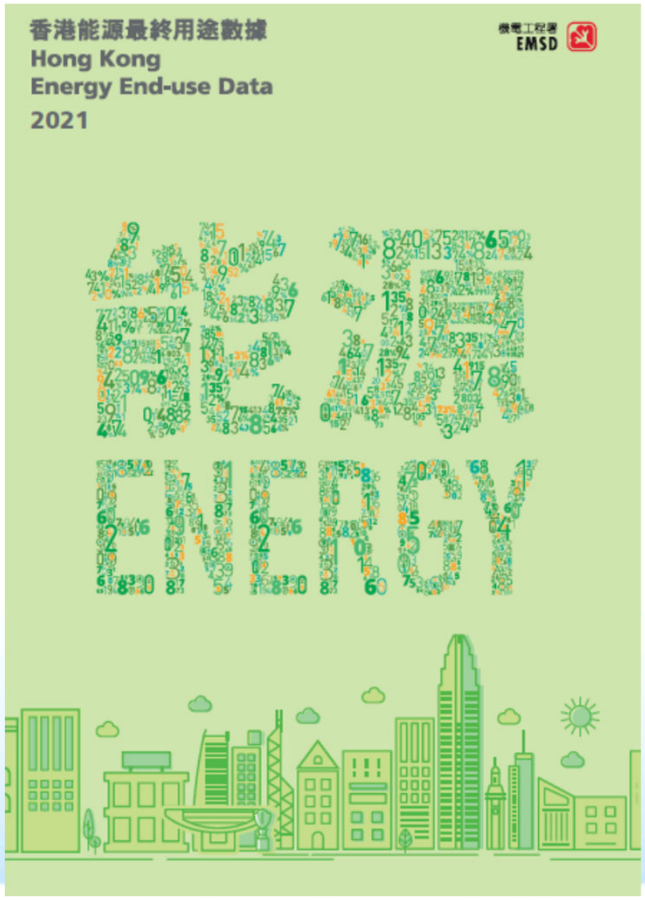
Public Webinar on Energy Efficiency and Conservation

Enhancing the transparency of energy data and benchmarks in commercial buildings by introducing Online Building Based Electricity Utilization Index Benchmarking Tool

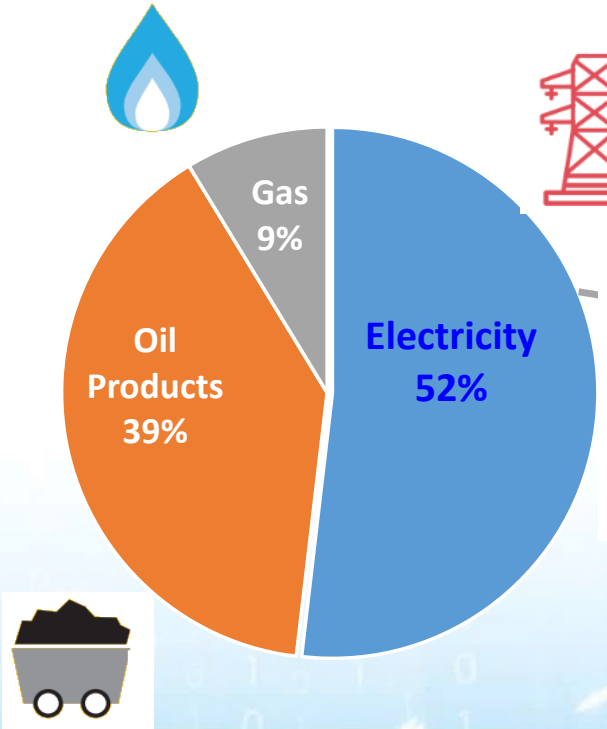
18 July 2022

機電工程署
EMSD

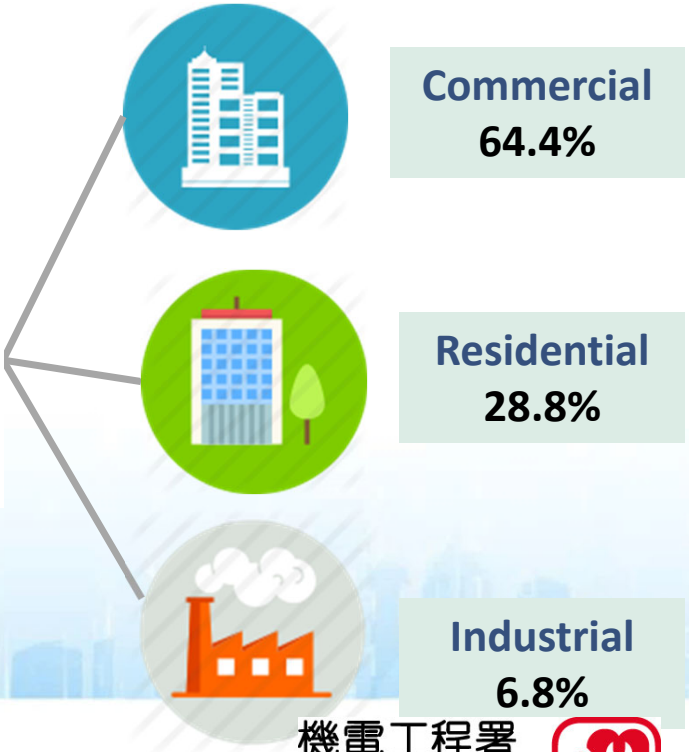
Energy Consumption in Hong Kong



Buildings Consume over 90% of the City's Electricity



~90% Buildings



Commercial
64.4%

Residential
28.8%

Industrial
6.8%

Reference:
(1) Hong Kong Energy End-use Data 2021, EMSD
(2) https://www.censtatd.gov.hk/en/data/stat_report/product/B1100002/att/B11000022021AN21B0100.pdf

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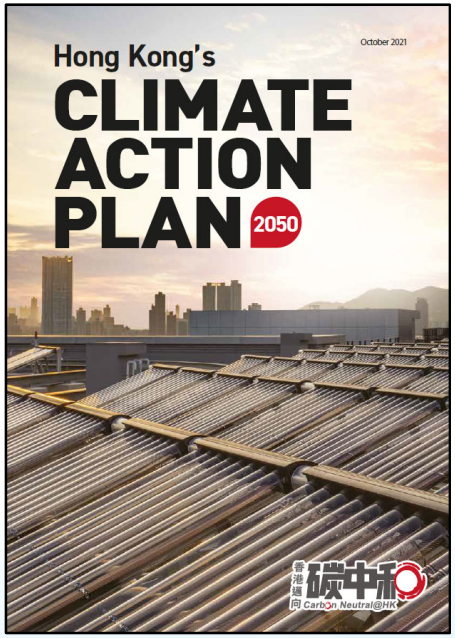
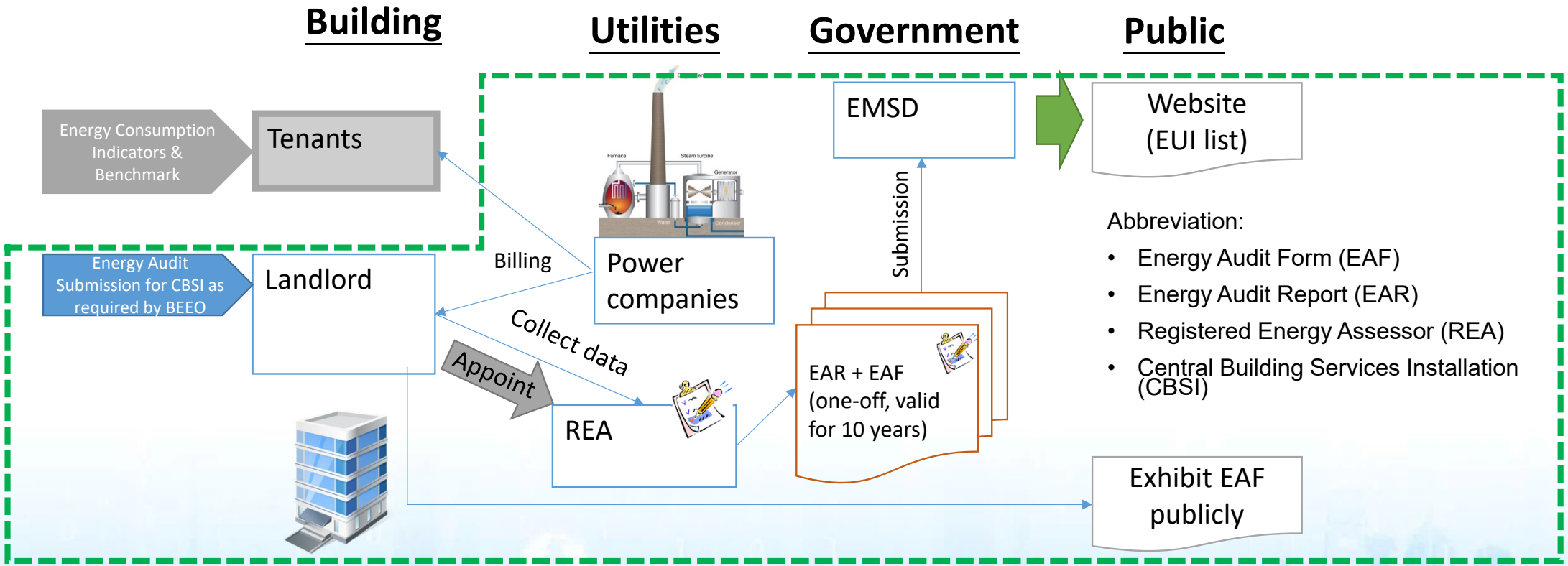
Data Transparency and Benchmarks



To mobilise the community to take collective actions to conserve energy, we need to enhance **the transparency of data and benchmarks**. We plan to, through releasing energy data and introducing energy benchmarking tools, facilitate the comparison of building energy consumption performance and **establish a two-way partnership** in carbon reduction.

"Carbon Neutrality" Partnership Launching Ceremony

Current BEEO Requirements



- Energy consumption of CBSI over the past 36 months is required to submit.
- EAF is required to exhibit publicity.
- Commercial buildings and commercial portion of composite buildings are required for Energy Audit

Online Building Based Electricity Utilization Index Benchmarking Tool (Online Benchmarking Tool)

- Benefit of whole Building Electricity Utilization Index:

  - ➢As an index for building owners to compare their building energy performance against similar building types.

  - ➢As a driving force for building owners to apply energy saving opportunities improving building energy performance

To develop a new **on-line benchmarking tool** for **whole buildings** electricity consumption

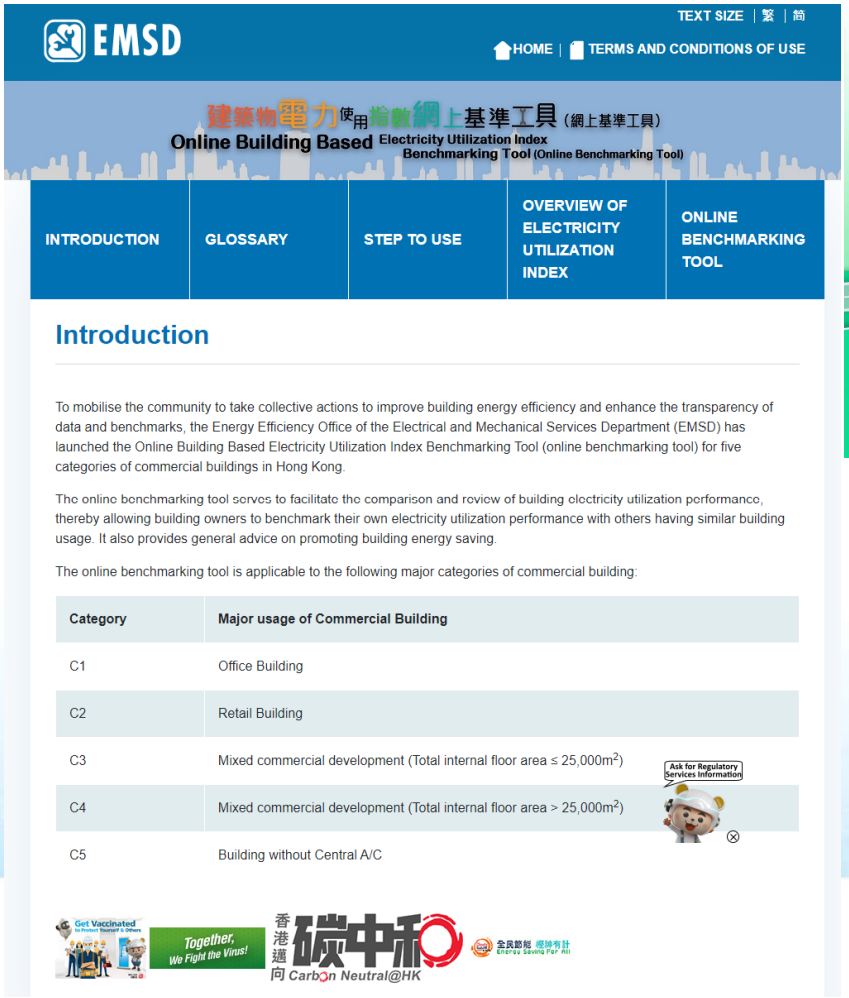
Methodology of Building Based EUI Benchmarking Tools

Building Category

Category	Major usage of Commercial Building
C1	Office Building
C2	Retail Building
C3	Mixed commercial development (IFA ≤ 25,000m2)
C4	Mixed commercial development (IFA > 25,000m2)
C5	Commercial Building without Central A/C

Launching of Online Benchmarking Tool

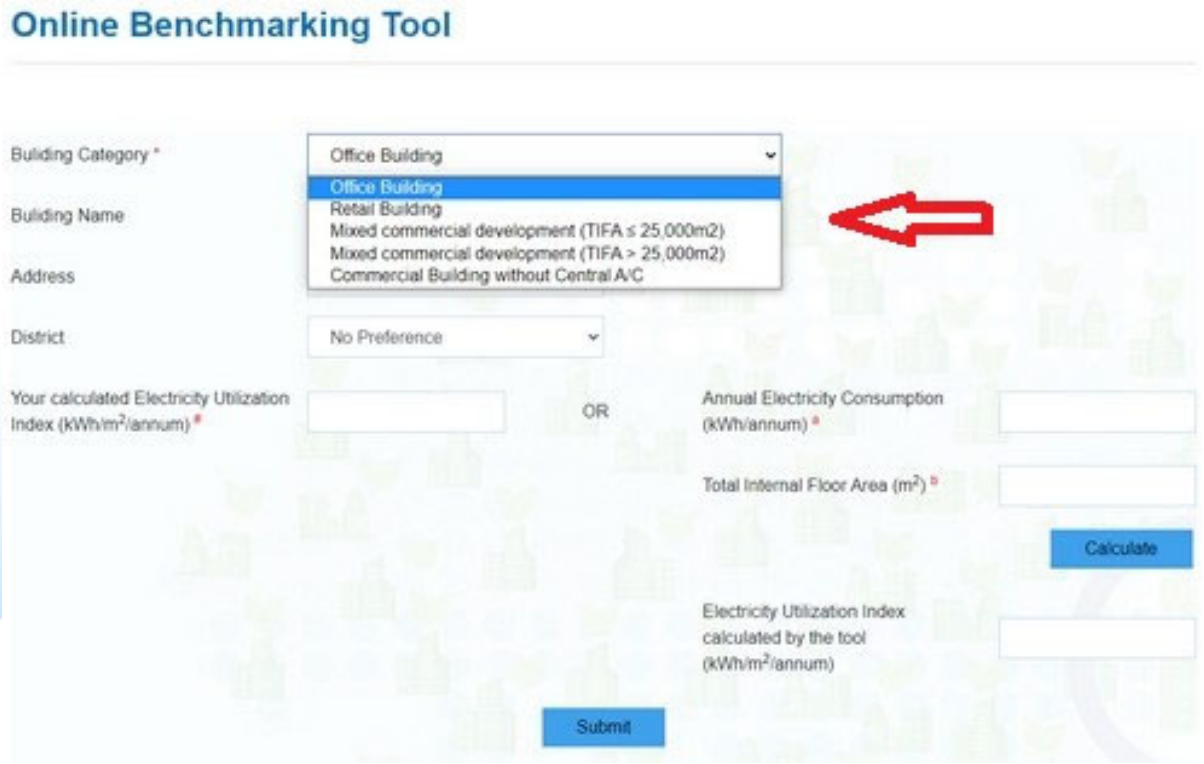
Online Benchmarking Tool



Step to use Online Benchmarking Tool

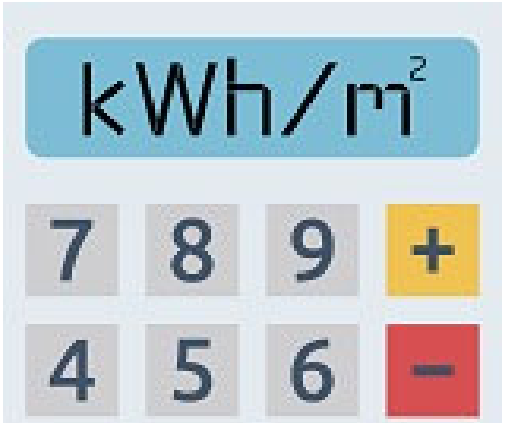
Step 1: Selecting your Building Category & Entering Building Information

To choose the building category of their building and enter the building information (if available)



Step to use Online Benchmarking Tool

Step 2: Input Electricity Utilization Index of a building



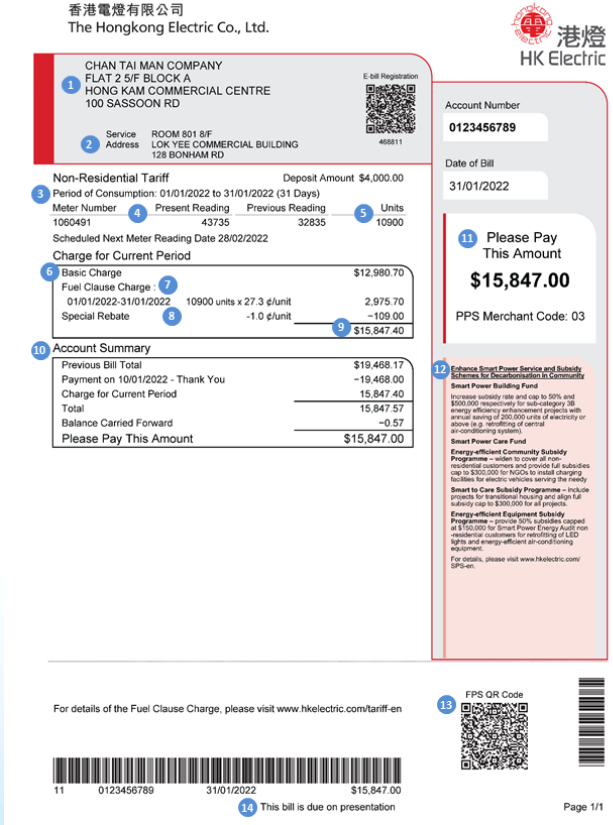
$$\text{Electricity Utilization Index} = \frac{\text{Annual Total Electricity Consumption of Whole Building (kWh / annum)}}{\text{Total Internal Floor Area of Whole Building (m}^2\text{)}}$$

Step to use Online Benchmarking Tool

Step 3: How to obtain Annual Electricity Consumption (kWh/annum) of your building?

a) User can collect the 12-month period electricity consumption data of a building from associated meter devices if available; or

b) Collect the 12-month period electricity consumption data of a building in kWh from landlord's and all tenants' electricity bills.



香港電燈有限公司
The Hongkong Electric Co., Ltd.

港燈 HK Electric

CHAN TAI MAN COMPANY
FLAT 2 5/F BLOCK A
HONG KAM COMMERCIAL CENTRE
100 SASSOON RD

Service Address: ROOM 801 8/F, LOK YEE COMMERCIAL BUILDING, 128 BONHAM RD

Account Number: 0123456789

Date of Bill: 31/01/2022

Non-Residential Tariff — Deposit Amount $4,000.00

Period of Consumption: 01/01/2022 to 31/01/2022 (31 Days)

Meter Number	Present Reading	Previous Reading	Units
1060491	43735	32835	10900

Scheduled Next Meter Reading Date 28/02/2022

Charge for Current Period

Basic Charge		$12,980.70
Fuel Clause Charge : 01/01/2022-31/01/2022	10900 units x 27.3 ¢/unit	2,975.70
Special Rebate	-1.0 ¢/unit	-109.00
		$15,847.40

Account Summary

Previous Bill Total	$19,468.17
Payment on 10/01/2022 - Thank You	-19,468.00
Charge for Current Period	15,847.40
Total	15,847.57
Balance Carried Forward	-0.57
Please Pay This Amount	$15,847.00

Please Pay This Amount
$15,847.00
PPS Merchant Code: 03

For details of the Fuel Clause Charge, please visit www.hkelectric.com/tariff-en

FPS QR Code

11 0123456789 31/01/2022 $15,847.00

This bill is due on presentation

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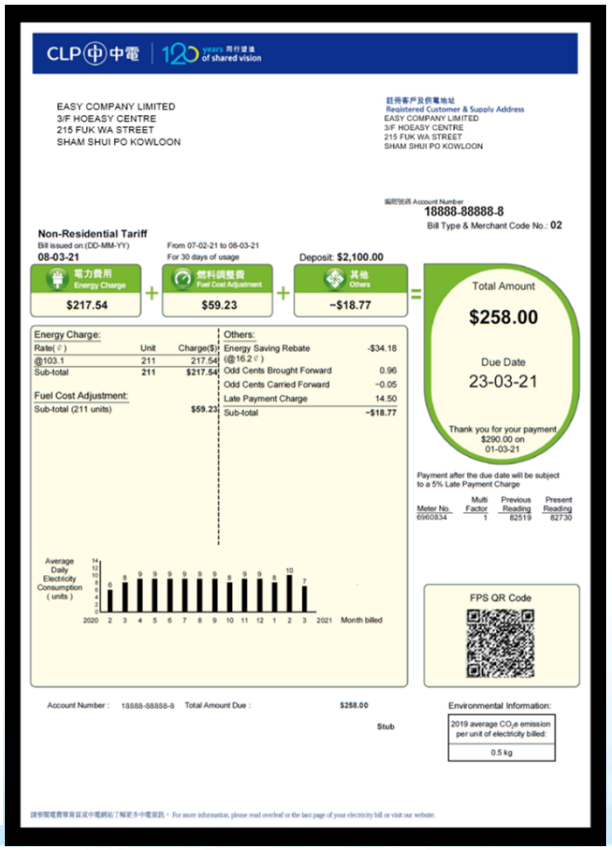

CLP 中電

EASY COMPANY LIMITED
3/F HOEASY CENTRE
215 FUK WA STREET
SHAM SHUI PO KOWLOON

Account Number: 18888-88888-8
Bill Type & Merchant Code No.: 02

Non-Residential Tariff
Bill issued on (DD-MM-YY): 08-03-21
From 07-02-21 to 08-03-21 For 30 days of usage
Deposit: $2,100.00

Energy Charge	Fuel Cost Adjustment	Others
$217.54	$59.23	-$18.77

Total Amount: $258.00
Due Date: 23-03-21
Thank you for your payment $290.00 on 01-03-21

Energy Charge:

Rate(¢)	Unit	Charge($)
@103.1	211	217.54
Sub-total	211	$217.54

Fuel Cost Adjustment:
Sub-total (211 units) $59.23

Others:

Energy Saving Rebate	-$34.18
(@16.2¢)	
Odd Cents Brought Forward	0.96
Odd Cents Carried Forward	-0.05
Late Payment Charge	14.50
Sub-total	-$18.77

Payment after the due date will be subject to a 5% Late Payment Charge

Meter No.	Multi Factor	Previous Reading	Present Reading
6960834	1	82519	82730

Average Daily Electricity Consumption (units)
2020 2021 Month billed

FPS QR Code

Account Number: 18888-88888-8 Total Amount Due: $258.00
Stub

Environmental Information:
2019 average CO_2e emission per unit of electricity billed
0.5 kg

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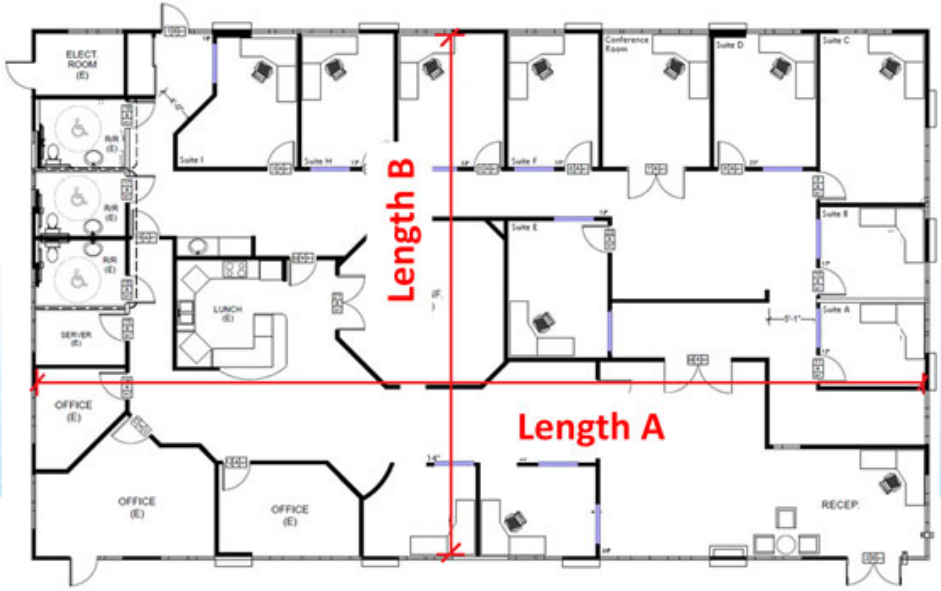
Step to use Online Benchmarking Tool

Step 4: How to obtain total internal floor area (m2) of your building?

With reference to the Building Energy Efficiency Ordinance (Cap.610), 'total internal floor area', in relation to a building, a space or a unit, means the sum of the floor area of all enclosed spaces measured to the internal faces of enclosing external and/or party walls for the whole building



Total Internal Floor Area (TIFA) = Length A x Length B

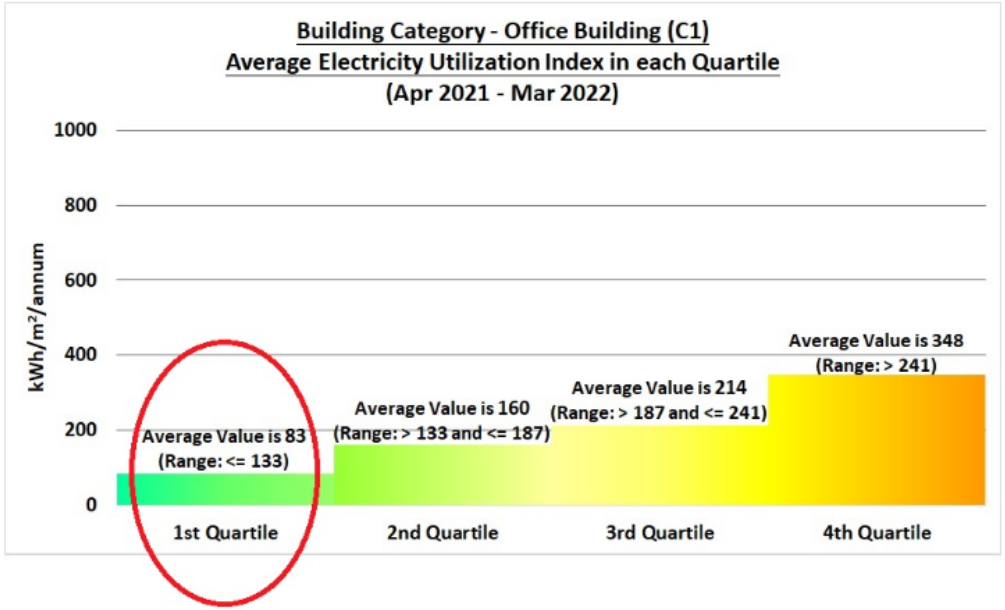
Step to use Online Benchmarking Tool

Step 5: Benchmark the Electricity Utilization Index of Building

To input the calculated electricity utilization index into the Online Benchmarking Tool, and the rating of its electricity utilization index among similar buildings will be obtained.

1st QUARTILE

Your reported Electricity Utilization Index of whole building is 128 kWh/m^2/annum



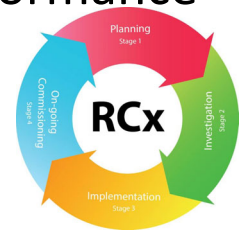
- **Lower EUI value** will be categorized in **lower quartile of benchmarking tools** and implied that **higher building energy efficiency** compared with other buildings in 2nd to 4th quartiles.
- Benchmark result based on the period of **Apr 2021 - Mar 2022** and will be **updated annually**, next round by **around Q3 of 2023.**

Step to use Online Benchmarking Tool

Step 6: Tips for enhancing building energy efficiency

Building owners may consider adopting the general advice on energy saving proposed by the tool to enhance building energy efficiency and improve the electricity utilization performance of the building after using this Online Benchmarking Tool

How to improve energy performance of building?



建築物電力使用指數網上基準工具

Online Building Based Electricity Utilization Index Benchmarking Tool

香港邁向碳中和 Carbon Neutral@HK

Thank You

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