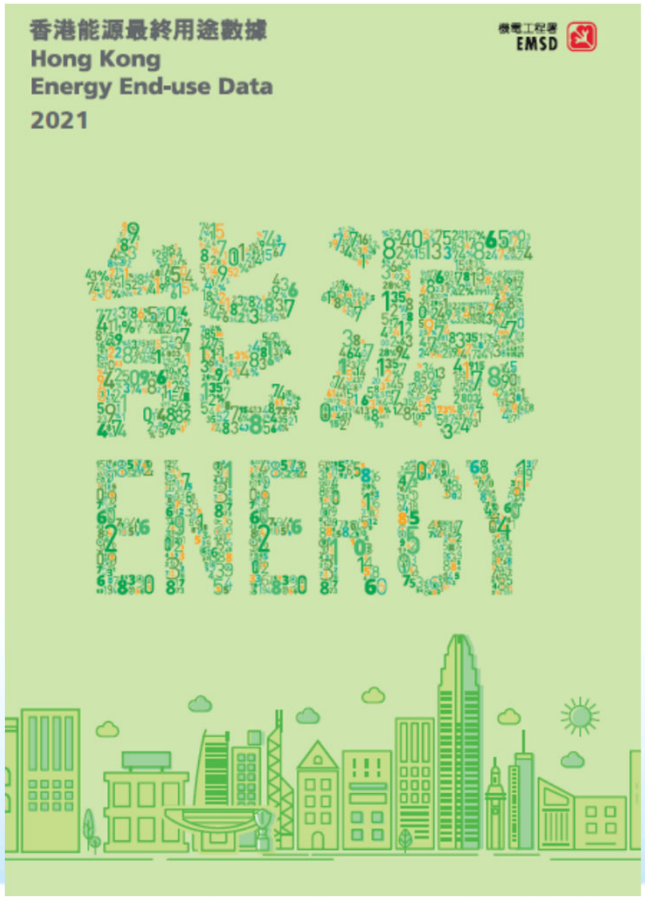
HKGBC CPD Webinar

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

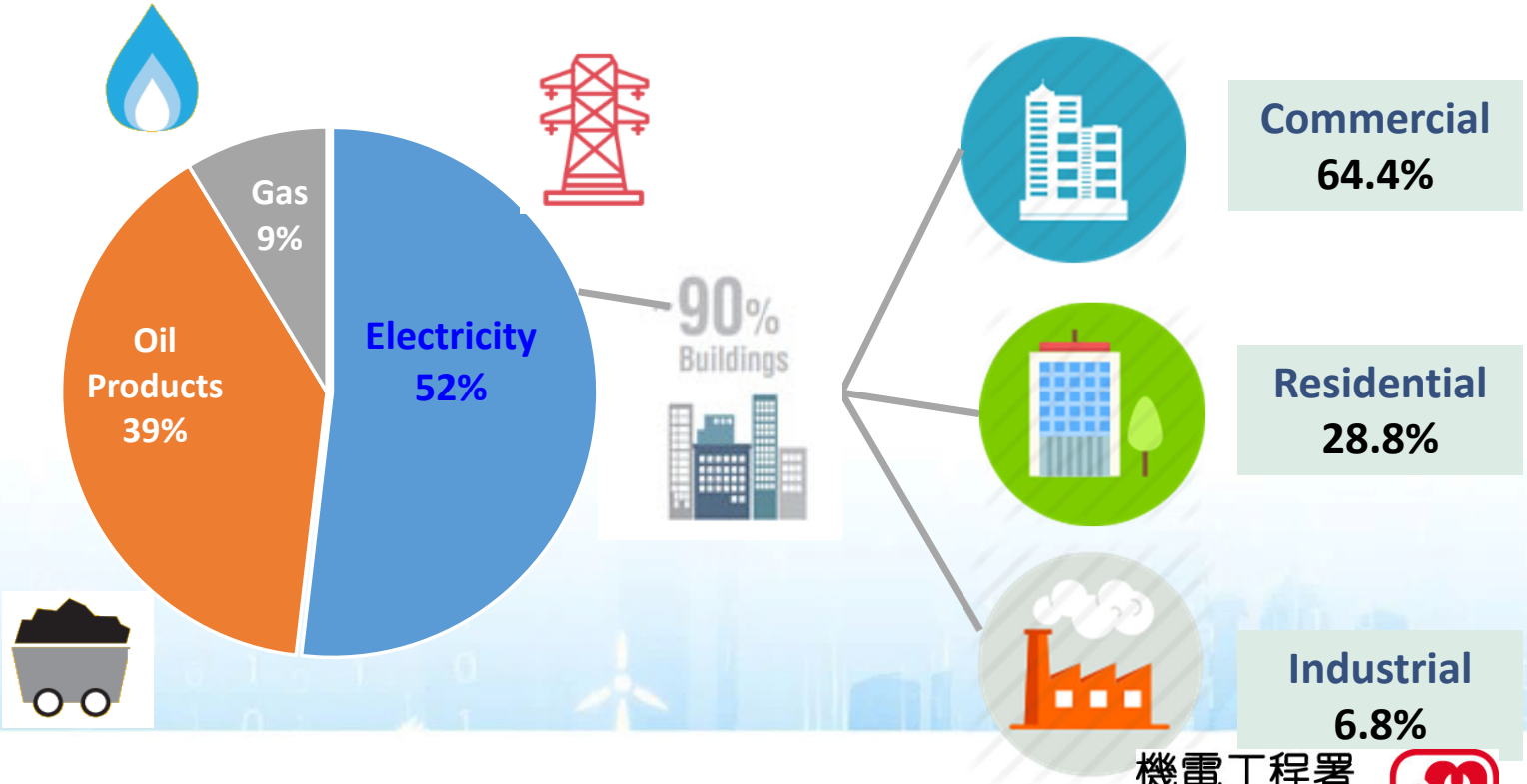
21 July 2022

機電工程署
EMSD

Energy Consumption in Hong Kong

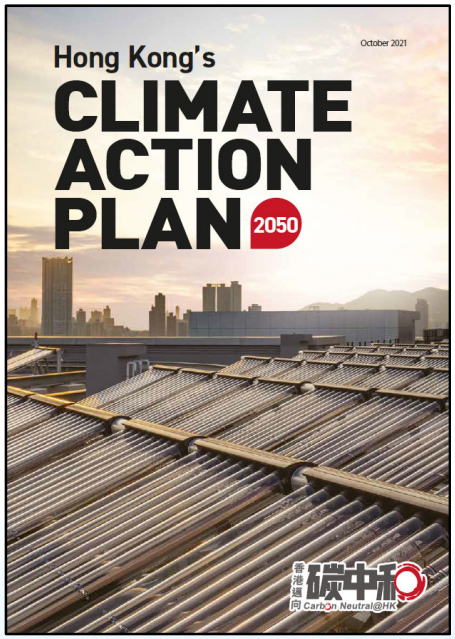


Buildings Consume over 90% of the City's Electricity



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

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.


「碳中和」夥伴 2021

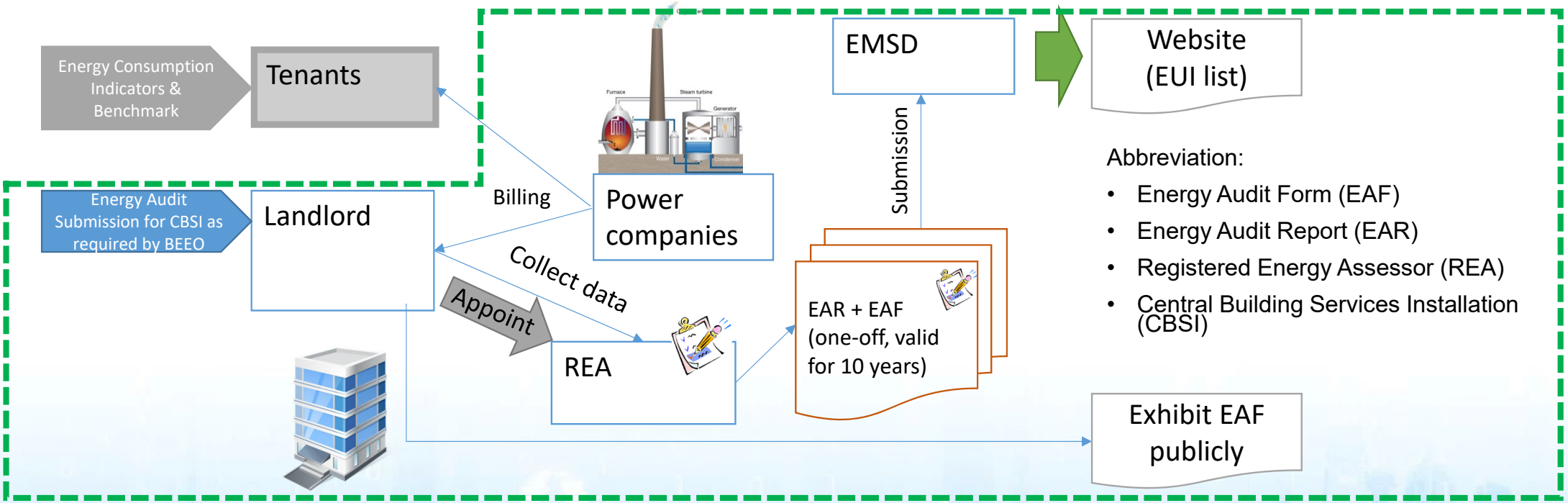

"Carbon Neutrality" Partnership「碳中和」夥伴 2021


香港
氣候行動
藍圖
2050
香港邁向碳中和
Carbon Neutral@HK

機電

Current BEEO Requirements

Building



- 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 identify cost-effective energy upgrades, realize energy and cost savings benefits from those upgrades.

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

  - ➢allow governments to gain a better understanding of their jurisdictions' building stocks

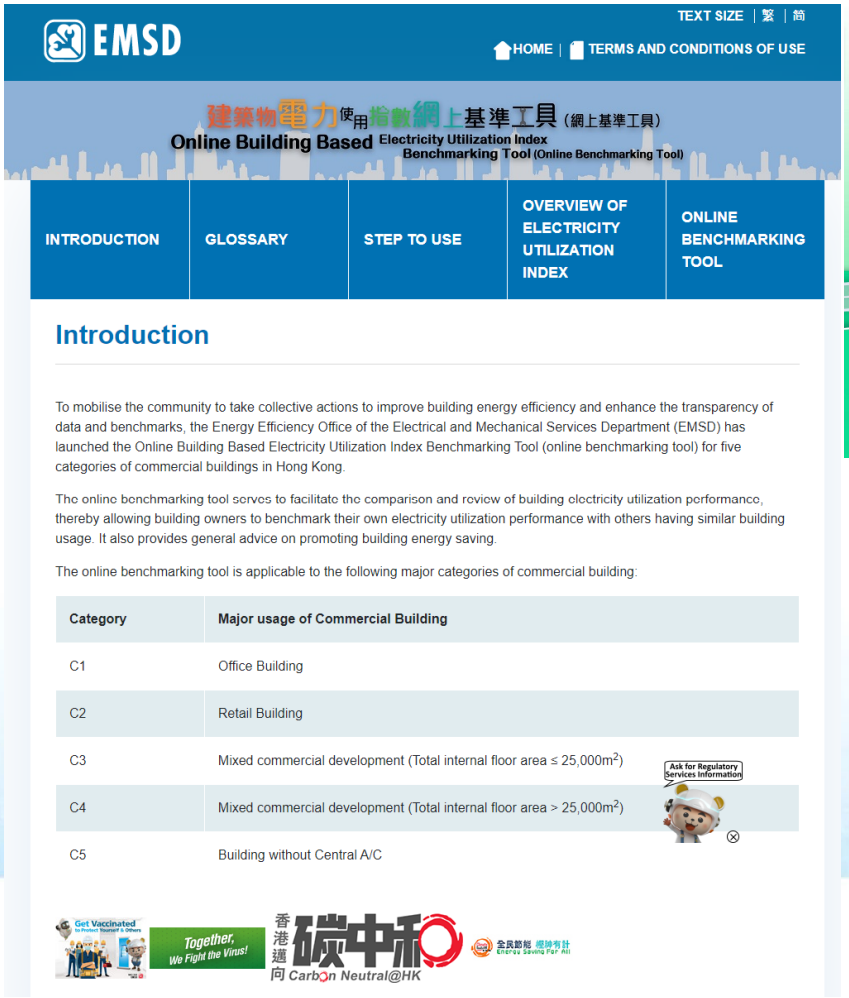
Methodology of Building Based EUI Benchmarking Tools

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

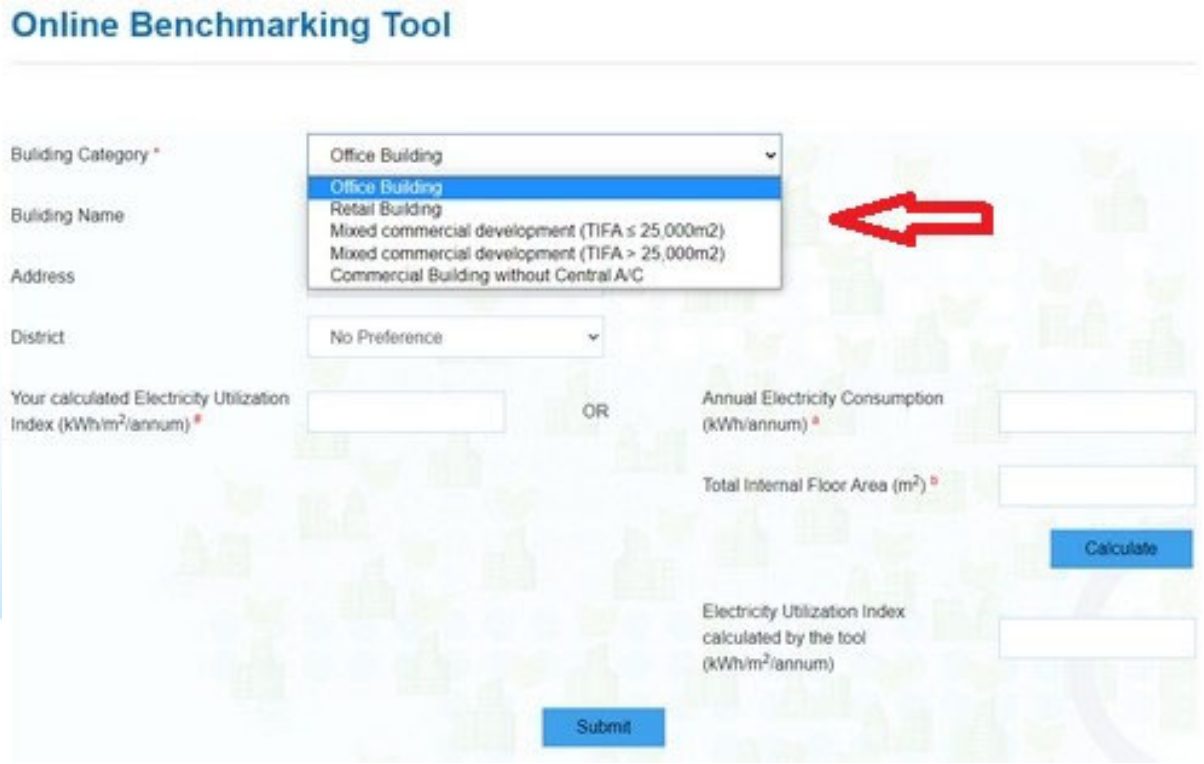
Online Benchmarking Tool



Step to use Online Benchmarking Tool

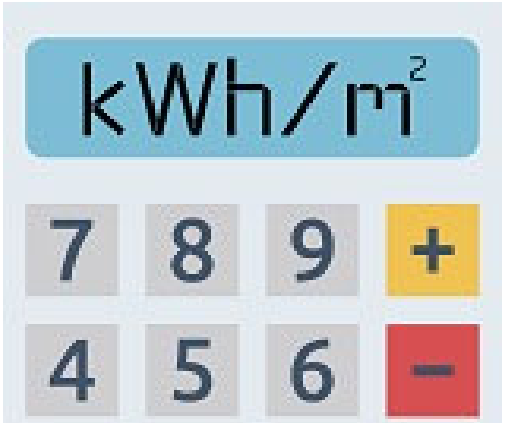
Step 1: Selecting your Building Category & Entering Building Information

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



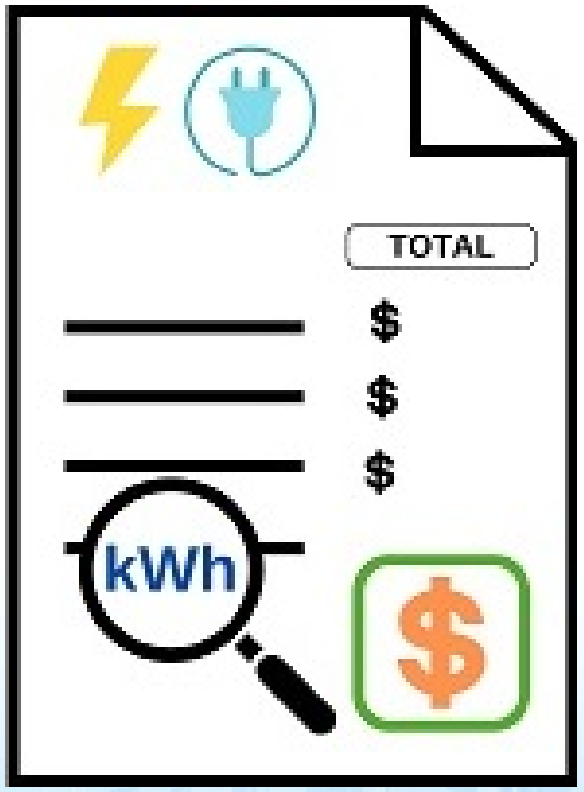
$$\text{Electricity Utilization Index} = \frac{\text{Annual Total Electricity Consumption of Whole Building (kWh / annum)}}{\text{Total Internal Floor Area of Whole Building (m}^2\text{)}}$$

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

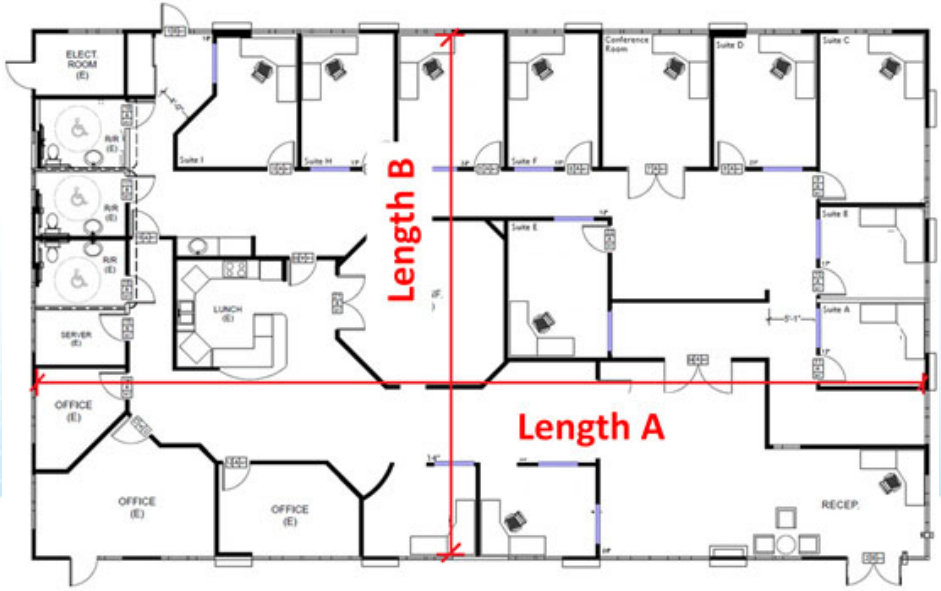
b) Collect the 12-month period electricity consumption data of a building in kWh from landlord's and all tenants' electricity bills.



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

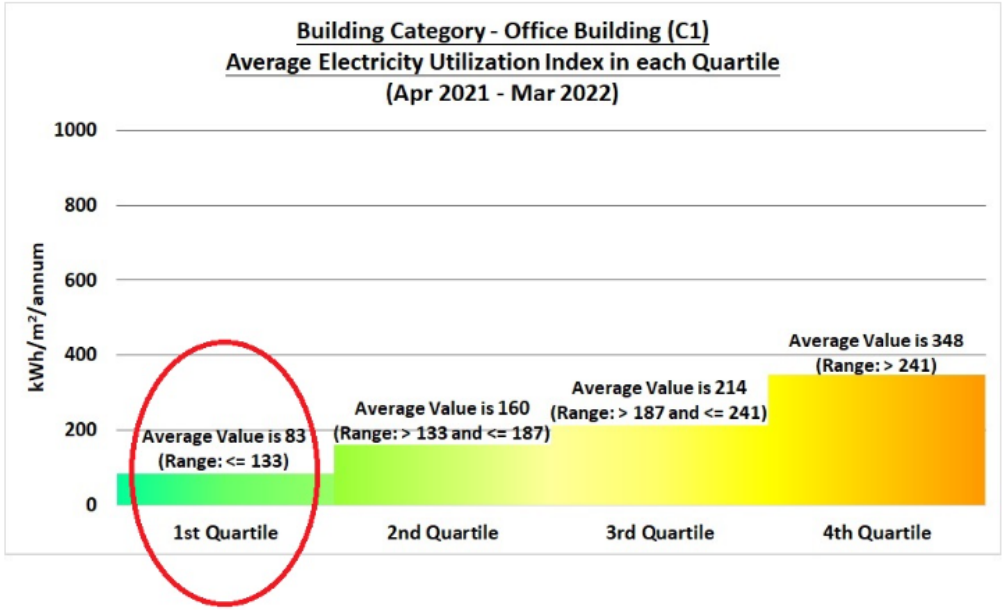
Step to use Online Benchmarking Tool

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



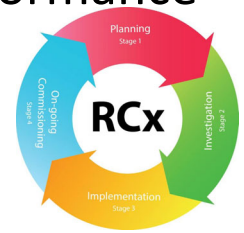
- **Lower EUI value** will be categorized in **lower quartile of benchmarking tools** and implied that **higher building energy efficiency** compared with other buildings in 2nd to 4th quartiles.
- Benchmark result based on the period of **Apr 2021 - Mar 2022** and will be **updated annually**, next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

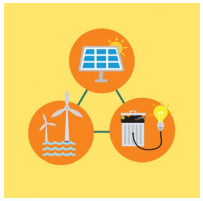
Step to use Online Benchmarking Tool

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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