



DEVELOPING HONG KONG AS A GLOBAL GREEN FINANCE CENTRE

Theme-Based Research

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EXECUTIVE SUMMARY

This Stakeholder Engagement Report by the Stakeholder Engagement Team under Task 6 (SET) follows on from the first report covering the period January-October 2022 (SER1). This report (SER2) covers the activities of the second reporting period of the Theme Based Research Project (TBRP) that took place between November 2022-June 2023.

Green Finance has become a highly popular topic of discussion in Hong Kong in 2022-23, especially after the COVID-19 restrictions were eased during 4Q2022 and lifted by year-end. There were many in-person events touching on various aspects of green finance that were relevant to the TBRP that the SET participated in. A list of these events is provided in the Appendix.

I. CARE2022

A major activity for the SET was organizing the Climate Adaptation and Resilience Conference on 10-12 December 2022 (CARE2022), which was one of Hong Kong's major in-person events related to climate change and green finance. The objectives of this event were to:

- (a) Build partnership with the HKSAR Government, including the financial sector regulators in Hong Kong that could further some of the specific tasks relevant to the TBRP.
- (b) Outreach to industry stakeholders to connect them to the specific tasks relevant to the TBRP, as well as to the overall work of HKUST in climate change and green finance.
- (c) Publicize aspects of the TBRP and to help the relevant research teams to build relationships with government and industry stakeholders.
- (d) Use the writing and publication of the post-conference report as another occasion to engage with stakeholders, including those relevant to the TBRP.

The event was successful in achieving its objectives, the details of which are in Chapter 1, and CARE2022 have generated more invitations to join others in deliberations about climate change and sustainability.

II. ENGAGEMENT FOR SPECIFIC TASKS

The Task Teams 1 to 6 are all well on the way in their research work. The Stakeholder Engagement activities focused largely on Tasks 2 to 6, as these were the Tasks that needed outreach and working with stakeholders. In summary:

- 1. Task 1 consists of four separate research teams looking into separate topics. The SET had aided Task 1.2 in sourcing relevant information from financial houses and scholarly research that SET came across.
- 2. Task 2 consists of two sub-tasks relating to climate science and creating weather derivatives. The sub-task teams had requested the SET to connect them to the insurance sector, as the insurance industry was most likely to find the climate science research in Task 2.1 useful and insurance industry players could best guide the Task 2.2 weather derivative team in what type of products might be most useful to market participants. Connections to the insurance sector have been established in 2023 and collaboration is being considered with the Insurance Authority in Hong Kong.
- 3. Task 3 consists of combining the knowledge of science, engineering, and finance to put together financing ideas for large-scale retrofits of existing buildings in Hong Kong that could improve energy efficiency, thereby helping Hong Kong to decarbonize.
 - (i) As discussed in SER1, obtaining energy usage data from buildings remain a challenge as the HKSAR Government does not have detailed data and the two electricity companies in Hong Kong have not released data for public usage. The SET has connected with all relevant parties in

the HKSAR Government and the two electricity companies to explore what information could be released for the purposes of Task 3. This aspect of the work remains challenging, and progress is slow.

- (ii) The SET has also connected with providers of retrofit services to gain knowledge about the retrofit services that can save energy and their current costs to understand pay-back periods.
 - (iii) The SET has also connected with the public sector stakeholders (including Housing Bureau, Housing Society, and Urban Renewal Authority) to understand their retrofit cycles for publicly built housing.
 - (iv) Furthermore, the SET is exploring the idea of whether building retrofits could generate carbon credits that would make retrofits more attractive to asset owners. In addition, the SET is exploring with Towngas new ideas for the adoption of Grade 1 electrical appliances, and what financing plans might be needed to do it at scale to help occupants decarbonize.
 - (v) The SET has also connected with bankers interested in packaging large-scale retrofits that could raise capital from the private market.
4. Task 4 consists of two separate tasks:
- (i) Task 4.1 aims to create a prototype blockchain-based carbon tracking system for the major building materials used in the construction industry. The SET has regular meetings with the research team to follow its progress, as the research team works closely with the stakeholder partner (Gammon). The work is proceeding well.
 - (ii) Task 4.2 aims to understand tertiary climate risks. While the research team continues to gather relevant data and examples of tertiary climate risks from around the world, the SET has created opportunities for the research team to share their work with the HKSAR Government and with the public (CARE2022), as well as with the insurance sector.
5. Task 5 relates to green finance talent. The research team published its first report to coincide with CARE2022 and the report was well-received. The research team is continuing with their research, while the SET has shared climate and sustainability perspectives with financial institutions, including how to shape courses to improve knowledge in the financial and business sectors.
6. The research aspect of Task 6 has done background research and the SET has supported them to arrange meetings with experts in Hong Kong, Singapore, and London to date.

III. OBSERVATIONS

The SET observes that:

1. Supplement basic knowledge

The finance sector and professionals in science, climate, environmental sustainability, and data management are realizing that they need to cooperate – the era of climate change requires cross disciplinary understanding to solve problems – and at this stage, the finance sector’s understanding of the basics of environmental sustainability is relatively low.

2. Role of universities and professional bodies

Universities and professional bodies play important roles in disseminating knowledge in environmental sustainability and linking it to finance. Courses should include the basics in understanding decarbonization and climate adaptation so professionals can better shape corporate plans, projects, and investments that leads to true sustainability.

3. ESG disclosure, financial performance, and policy

The disclosure of climate risks and environmental and social performance (ESG) represents the non-financial performance aspects of corporate performance. Financial performance remains crucial. Government policies can incentivize capital to be directed towards environmentally sustainable choices. The buildings sector is ripe for an extensive policy overhaul so that retrofits and decarbonization could be financially profitable and socially desirable (as could be seen from Task 3).

4. Inclusion of insurance sector in greening finance

Hong Kong aspires to be a center for insurance services, which is a part of financial services. The TBRP could play a role in helping to beef up Hong Kong capacity in climate science and data, creating derivative products to diversify risks, and green finance policies.

5. Hong Kong as IGFC

The aspiration for Hong Kong to be an International Green Finance Center (IGFC) cannot be divorced from policies and measures that may be needed for the city to be a strong finance center. While this is beyond the scope of TBRP, it is a general point not to be overlooked.

This SER2 of the TBRP from the SET covers the period between November 2022-June 2023. For this report, the engagement activities are divided into two parts:

- The first period from November 2022 to February 2023 is noted in this chapter. The dominant activity was a specific event planned, organized, and presented by the SET that touched upon several of the TBRP's themes.
- The second period from March to June 2023 are noted in Chapters 2 and 3.

INTERNATIONAL, NATIONAL, AND LOCAL ATTENTION

Overall, green finance, climate change, and sustainability have become highly popular topics of discussion in Hong Kong in 2022-23, considering international attention and national policies to these issues, as well as new initiatives from the HKSAR Government.

International focus surrounded COP27 in Sharm El-Sheikh, Egypt (7-20 November 2022) marked the 30th anniversary of the adoption of the United Nations Framework Convention on Climate Change. The COP15 held in Montreal, Canada (7-19 December 2022) under the UN Convention on Biological Diversity led to the agreement to protect 30% of land and oceans by 2030.¹ These multilateral gatherings generated global attention to the complex challenges to decarbonize, deal with climate adaptation, strengthen biodiversity and ecosystems, as well as how best to direct capital towards green activities.

China's national policies are also having an important impact on Hong Kong. The national 14th Five Year Plan (2021-25) contains major policies on climate change,

biodiversity, and sustainability. It also envisages Hong Kong to serve as an international financial center (IFC) and to improve the connectivity within the Greater Bay Area among the constituent parts.²

The HKSAR Government's policy is to "develop green and sustainable finance" through promoting "the development of Hong Kong as a premier financing platform for governments and green enterprises in the Mainland and around the world". In addition, the government plans to develop Hong Kong "into an international carbon market".³ Furthermore, the Budget 2023 contains a significant section on bringing together green technology and finance for Hong Kong to be an international green technology and financial center. The Financial Secretary announced he would set-up a Green Technology and Finance Development Committee to formulate an action agenda, and that an International GreenTech Week would be organized in the latter part of 2023.⁴

The combination of international, national, and local attention led to much greater focus by all sectors in Hong Kong on the green agenda, especially after the COVID-19 restrictions began to ease during 4Q2022. Since then, there were many in-person events touching on various aspects of green finance that were relevant to the TBRP that members of the project participated in, including the SET. A list of these events is provided in Appendix.

NOVEMBER 2022 TO FEBRUARY 2023: CARE2022

This first period was dominated by the organization and presentation of Climate Adaptation and Resilience Conference (CARE2022) at HKUST and including its aftermath that resulted in the publication of the post-conference report in February 2023. This event was important because its purpose included extensive engagement with many Bureaux and Departments of the HKSAR Government, as well as the financial regulators

1. COP15 was held in two parts. In 2021, the first part was held in Kunming, China, and the second part had to be held in Montreal, Canada, due to Covid-19 rising in China. The outcome of COP15 is known as the Kunming-Montreal Global Biodiversity Framework.

2. The Greater Bay Area consists of the major cities of Guangdong Province, Hong Kong, and Macao.

3. Hong Kong Policy Address 2022, paragraph 37 (iv).

4. Hong Kong Budget 2023-24, paragraphs 58-63.

in Hong Kong, to set the stage for on-going engagement relevant to several themes of the TBRP, as well as on-going research at HKUST that related to climate change.

PLANNING AND DESIGNING CARE2022

The key activity for the SET was to organize and present CARE2022 on 10-12 December 2022, which was one of Hong Kong's major in-person events related to climate change and green finance in 2022.

HKUST organized the first CARE event in 2018 that was highly successful in bringing climate adaptation and resilience to public attention. It was not possible to plan another event till 2022 when COVID-19 restrictions were easing. The contribution of CARE2022 to the TBRP was to combine green finance alongside climate change issues. As such, it provided an ideal occasion to include several elements of the TBRP.

Considering the TBRP, the SET sought to design CARE2022 with the following objectives:

- (a) Build partnership with the HKSAR Government, including the financial sector regulators in Hong Kong that could further some of the specific tasks relevant to the TBRP.
- (b) Outreach to various industry stakeholders to connect them to the TBRP, as well as to the work of HKUST in climate change and green finance.
- (c) Publicize several aspects of the TBRP and to help the relevant research teams to build relationships with government and industry stakeholders.
- (d) Use the writing and publication of the post-conference report as another occasion to engage with stakeholders, including those relevant to the TBRP.

GOVERNMENT PARTICIPATION

CARE2022 had the active support of four policy Bureaux and nine Departments plus the three financial Regulators in the design of the event that included their participation at the event. The government institutions were Supporting Organizations of the event.

FIGURE 1: GOVERNMENT INSTITUTIONS SUPPORTING CARE2022

Government Bureaux	Government Departments	Financial Regulators
<ol style="list-style-type: none"> 1. Development Bureau 2. Environment and Ecology Bureau 3. Financial Services and Treasury Bureau 4. Housing Bureau 	<ol style="list-style-type: none"> 1. Agriculture, Fisheries and Conservation Department 2. Architectural Services Department 3. Civil Engineering and Development Department 4. Drainage Services Department 5. Geotechnical Engineering Office 6. Hong Kong Observatory 7. Housing Authority/Housing Department 8. Planning Department 9. Water Supplies Department 	<ol style="list-style-type: none"> 1. Hong Kong Monetary Authority 2. Hong Kong Exchanges and Clearing Limited 3. Securities and Futures Commission

The SET created the program from the start by working with the Bureaux, Departments, and Regulators to design their participation so that the policies and projects of the HKSAR Government could be showcased and discussed with stakeholders.



The conference website of CARE2022

An important outcome of the collaboration with the HKSAR Government was that Hong Kong Observatory – the climate authority in Hong Kong – followed-up on 17 December 2022 with a more in-depth webinar on climate science, which was relevant to Task 2.1, as there was insufficient time on Day 1 to fit in more discussion about climate science.



"Climate Science Webinar" organized by Hong Kong Observatory, providing an update on the science of climate change.

Other organizations

Other Supporting Organizations of CARE2022 were financial sponsors and non-financial supporters, some of which are TBRP partners, which helped to deepen relations with them. The non-government partners named in the TBRP that were Supporting Organization were:

- Hong Kong Green Finance Association (HKGFA),
- Financial Services Development Council (FSDC), and
- Hong Kong Institute of Qualified Environmental Professionals (HKIQEP).

In addition, Bank of International Settlement Innovation Hub, another TBRP partner, participated on Day 3. Other organizations were also active supporters and participants in CARE2022.



Sponsors and supporting organizations of CARE2022

Structure of CARE2022

CARE2022 took place over three days (10-12 December 2022). The event was designed with the interests of specific groups of stakeholders in mind. The design of the

sessions was for short presentations by key presenters followed by cross-cutting discussions with a wide number of industry stakeholders, which proved effective to engage participants.

DAY 1

MORNING

- (i) Climate Science Update
- (ii) Panel of government directors to discuss their climate policies and plans



DAY 1

AFTERNOON

- (i) Workshop A – multi-stakeholders discussion that covered urban planning, infrastructure, energy, transport, biodiversity, technology, climate risks and finance.
- (ii) Workshop B – multi-stakeholders discussion that covered emergencies, security, water, heat and public health, and regional collaboration. Task 4.2 was featured.



DAY 2

MORNING

Designed for university scholars to discuss their research, where climate science relating to Task 2 and Task 4.2 were showcased.



DAY 3

MORNING

This was designed to highlight financing climate change and green developments, where the financial regulators were featured together with financial and industry stakeholders to discuss ideas and projects that needed financing, including the need for the right talent.

Task 3, Task 5 and aspects of Task 6 were part of the discussion.



MEDIA COVERAGE OF CARE2022

Commercial Radio (Program: Our Way Out) CARE2022 Interview Series



2022.11.24	Topic: ESG當成風險管理 https://www.881903.com/program/archives?token=33c09c8fdd240d255bc595f78fa060cb
2022.11.25	Topic: 森林保育同樣重要 https://www.881903.com/program/archives?token=94d9be4744ae3817357f56f2885c3db2
2022.11.28	Topic: 濕地保育 https://www.881903.com/program/archives?token=c9e9ddfaf22a3b767f38a5453e7b3294
2022.11.29	Topic: 應對極端天氣 https://www.881903.com/program/archives?token=83671d94b9b3ea442c5542ff3687abcd
2022.12.01	Topic: 地球水災之進擊 https://www.881903.com/program/archives?token=18a16d2b514c422ddcf764792561b4d
2022.12.02	Topic: 大數據! 大氣候 https://www.881903.com/program/archives?token=4f7f0802cd8d16c1ea8ab7e816cd7b97
2022.12.09	Topic: 環保X科技X金融 https://www.881903.com/program/archives?token=5bdfc96f07f31512bfa110350b4c9562

Mass Media Reports

2022.12.12	Headline Daily 頭條日報網	許正宇冀持份者緊密合作 助港成綠色金融樞紐 https://www.stheadline.com/esg/3176395
	Hong Kong Economic Journal 信報網	許正宇：港應對氣候挑戰有獨特角色 https://www2.hkej.com/instantnews/article?id=3324169
	Sing Tao Daily 星島日報網	許正宇冀持份者緊密合作 助港成綠色金融樞紐 https://std.stheadline.com/realtime/article/1892242
	BASTILLEPOST 巴士的報	許正宇冀持份者緊密合作 助港成綠色金融樞紐 https://www.bastillepost.com/hongkong/article/11873157
	Hong Kong Commercial Daily 香港商報網	科大氣候研討會：官員與監管機構探討香港氣候政策與綠色金融發 https://www.hkcd.com/hkcdweb/content/2022/12/12/content_1377534.html
	Mirage News	HKUST CARE2022 Examines Green Finance, Policy Options https://www.miragenews.com/hkust-care2022-examines-green-finance-policy-913707

Government News

2023.03.14	Elite (p.7, Issue 1 of Year 2023), Fire Services Department - 氣候適應及復原力大會 https://www.hkfsd.gov.hk/eng/publications/elite/Elite2023_01.pdf
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CM Magazine Article Series



2022.12.22	科大CARE2022集思對抗氣候危機 https://www.pcmarket.com.hk/hkust-care2
2022.11.12	城市規劃 要有風道 https://www.pcmarket.com.hk/climate-challenge-part-4/
2022.11.11	燈柱上的氣候觀測 https://www.pcmarket.com.hk/climate-challenge-part-3/
2022.11.10	40°C高溫警示 儘快實現碳中和 https://www.pcmarket.com.hk/climate-challenge-part-2/
2022.11.09	氣候挑戰 https://www.pcmarket.com.hk/climate-challenge-part-1/

RELEVANCE TO TBRP

The program for CARE2022 included aspects of Task 2, Task 3, Task 4.2, Task 5, and Task 6:

Task 2.1

Task 2.1 involves climate science and climate risk modelling – the research was featured on Day 2, and the use of the climate data was highlighted also on Workshop A on Day 1 by two members of the Hong Kong Monetary Authority's (HKMA) Green and Sustainable Finance Cross-Agency Steering Group that looks at data. Workshop B involved government officials and Hong Kong Observatory (HKO).



Eric Hui and Cindy Pau from HKMA delivered presentation at CARE2022 Day 1 Workshop

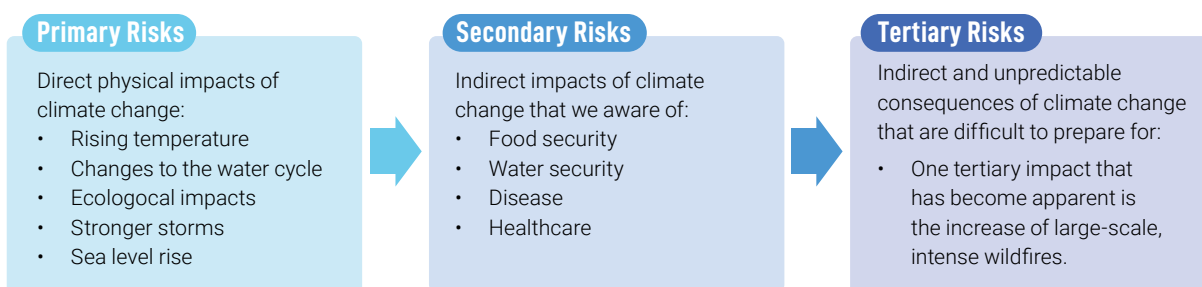
Task 4.2

Task 4.2 involves climate risks and impact tracking. Workshop B on Day 1 explained the concept for this research to the stakeholder audience, and a more extensive presentation was made on Day 2 to an academic audience.



Prof. Alexis Lau from HKUST gave a talk on tertiary unknown risks on Day 2

FIGURE 2: THREE TYPES OF CLIMATE RISKS



Task 3

Task 3 involves financing green infrastructure and facilitating policy for at-scale implementation. Panel 1 on Day 3 included two property companies, one of which discussed the need for such financing for retrofitting buildings in Hong Kong.



Panel 1 on Day 3 included the representatives of property companies and banks

Task 5

Task 5 involves studying green finance manpower. The Task 5 research team used its participation on Day 3 of CARE2022 to release their first report.



Christy Yeung from Task 5 introduced their first report

THE HONG KONG GREEN AND SUSTAINABLE FINANCE TALENT DEVELOPMENT AND STRATEGY



HKUST study The Hong Kong Green and Sustainable Finance Talent Development and Strategy mapped out the key stakeholders, desired skill areas and knowledge progression path of the current green and sustainable market, providing employers, educators, and job seekers information of this up and rising sector to help guide the Hong Kong's strategy in sustainability talent development. The study included recommendations on professional certification, skills framework, engagement of scientific expertise, and compare different international practices, such as the UK's chartership bodies in delivering sustainability training, Singapore's approach in upskilling its public officials on sustainability, and European Union's emphasis on educating its workforce on regulatory changes.

Task 6

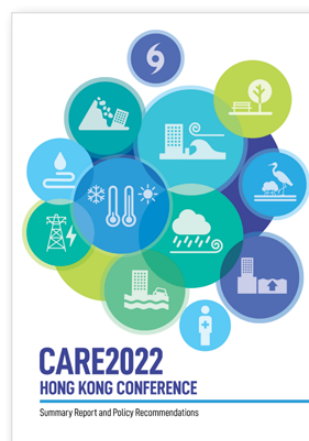
Task 6 involves policy research to support Hong Kong as a green finance hub. Much of the discussion at CARE2022, especially Day 3, was relevant to the overall context of Task 6. All the senior policy regulators were involved on Day 3 to explain their current policies.



From the top: Eddie Yue (HKMA), Christopher Hui (FSTB), Choi Hoi Hui (HKMA), Megan Tang (SFC), Ken Chiu (HKEX) explained the current policies related green finance on Day 3

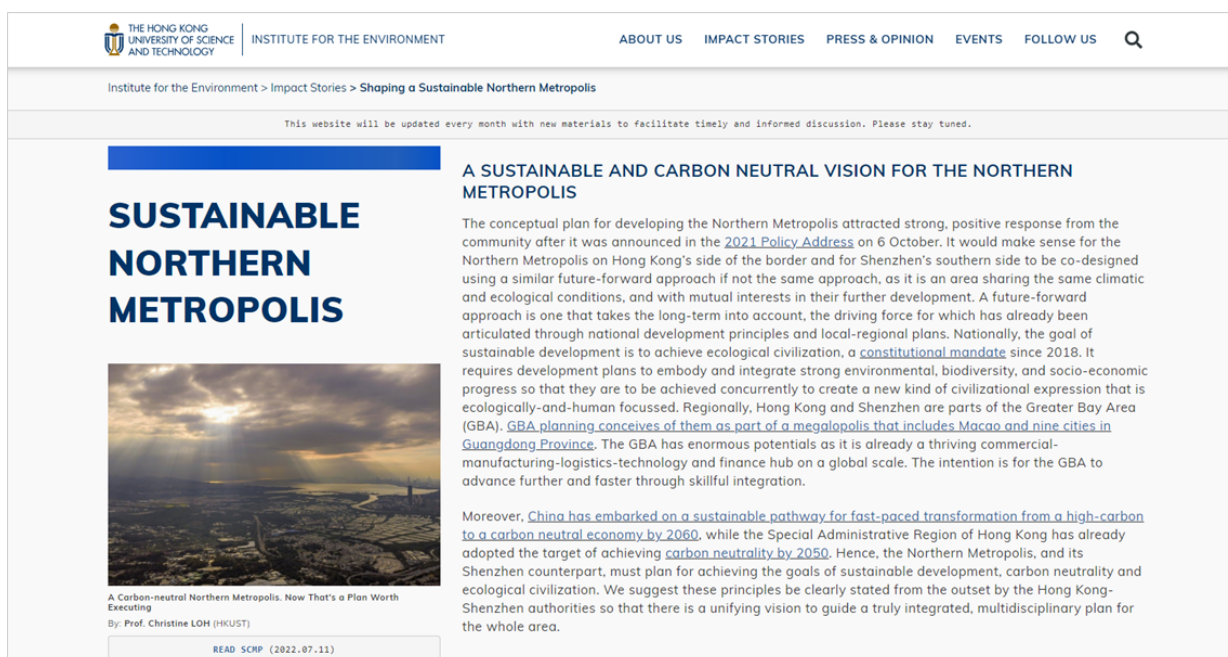
CARE2022 REPORT

The post-conference CARE2022 Report was published in February 2023 with specific recommendations for the HKSAR Government. In preparing the report, drafts were shown to the various individuals and organizations featured, providing the SET with the opportunity to engage with government officials, regulators, and others. The report is available at: <http://care.hkust.edu.hk/report>.



II: NORTHERN METROPOLIS DEVELOPMENT PROJECT

The SET also created the Northern Metropolis webpage in April 2022. It provided a useful site that summarized the early stage of the HKSAR Government's envisioning of this massive development project. The goal of the site was to raise issues in an interdisciplinary and creative manner that includes green finance.



The webpage of Northern Metropolis

In 2023, as the government released more information, HKUST was invited by professionals interested in the development of the Northern Metropolis to (i) contribute a chapter to a book to be published in Chinese in Hong Kong; and (ii) participate in a two-day forum on the subject on 24-25 June 2023, as a direct result of the creation of the website. Among various raised, the SET emphasized the role of green finance.



The HKUST contributed a chapter about the development of Northern Metropolis in the book, "25.50".



Event flyer of the two-day conference "Future City Vision – Northern Metropolis Forum on 24-25 June 2023

III: GHG ASSESSMENT TOOL AND CALCULATOR FOR SMES

One of the challenges of decarbonizing an economy is the participation of Small-to-Medium Enterprises (SMEs). As Hong Kong's regulators had decided to adopt TCFD and ISSB (international disclosure and reporting systems)⁵ in the foreseeable future, Scope 3 emissions would need to be addressed.⁶

In 2022, HKMA and Securities and Futures Commission (SFC) had asked HKUST about ways to measure the carbon emissions of SMEs in Hong Kong (noted in the TBRP's first report) and to explore developing a GHG Emissions Estimation/Calculation tools. There were many debates about how best to do this without imposing

too much work on the part of SMEs, and without using legislation to force SMEs to report. In 2023, HKUST was successful in creating an online assessment tool and calculator for the regulators (also see page 17).

A meeting was hosted by SFC with participation from HKMA on 27 March 2023 to finalize the methodology which the SET attended to assist the overall discussion. On 6 June 2023, a meeting was held at HKMA to discuss the use of machine deep learning in the development of the estimation tool. The regulators intend to launch the tool and calculator in the summer of 2023.

5. The Task Force on Climate-related Financial Disclosures (TCFD) is a global organization formed to develop a set of recommended climate-related disclosures that companies and financial institutions can use to better inform investors, shareholders, and the public of their climate-related financial risks. The International Sustainability Standards Board (ISSB) was formed in 2021 following market demand to establish standards that will result in a comprehensive global baseline of sustainability disclosures focused on the needs of investors and the financial markets.

6. Scope 3 emissions encompass emissions that are not produced by the reporting company itself, and not the result of activities from assets owned or controlled by them, but by those that it is indirectly responsible for, up and down its value chain.

Task 1:

THE IMPACTS OF ENVIRONMENTAL RISKS ON FINANCIAL MARKETS AND FINANCIAL DECISIONS

The four Sub-Tasks within Task 1 are essentially independent research projects being conducted by separate teams. The engagement that the SET could provide with respect to external stakeholders depended on whether there were specific needs from the four teams.

During early 2023, the SET was able to provide moderate assistance on two occasions to the Task 1.1 team conducting research on the assessment of the efficiency of different Chinese equity markets with information:

- The SET connected with the sustainability teams at HSBC, Citi, and UBS asking if they had directly relevant research on how ESG-related news about specific firms affected its stock price in the short-to-medium term. HSBC provided several reports in the energy sector that did not address the topic directly. Citi provided one report, and UBS did not have anything relevant.
- The SET kept a look out for information that might be useful for Task 1.1. Relevant research papers were sent to the Task 1.1 research team.⁷

The SET's understanding with the Task 1.1 team was that when it had research findings that they would then discuss what kind of engagement activities might be relevant.

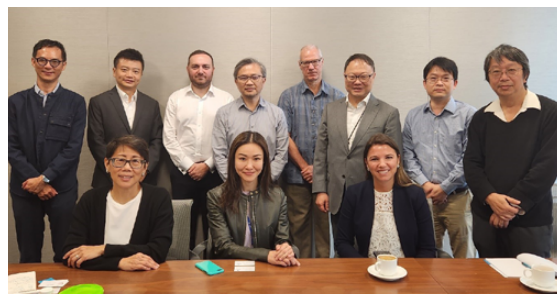
Task 2:

CLIMATE RISK MODELING AND DERIVATIVE PRODUCTS

Task 2 has two Sub-Tasks. Sub-Task 2.1 is a science project that aims to generate publicly available fine-scale, long-term scenario climate related data that could be used by

policymakers and industry players. Sub-Task 2.2 aims to use the best available weather data to design financial derivatives that could help to price and diversify a basket of weather-related risks relevant to asset owners and firms in Hong Kong and Mainland China.

It had already been reported in SER1 that the SET arranged for the Sub-Task 2.2 research team to meet Cathay Pacific Airways and Swire Properties Limited to see whether those companies would use weather derivatives and the response was that they were not using them. The Sub-Task 2.2 team wanted to meet stakeholders in the insurance sector. A meeting was arranged on 15 March 2023 for both the Sub-Task 2.1 and 2.2 teams to meet senior executives from Zurich Insurance. The meeting generated good understanding on how the Sub-Task 2.1 team's climate science work might be useful to the insurance sector, and that the Sub-Task 2.2 team could call upon Zurich Insurance whenever they needed to connect with them as they continued with their research.



Meeting between HKUST and Zurich Insurance

Furthermore, the SET was able to arrange a meeting with the top management of Hong Kong's Insurance Authority on 28 April 2023, where HKUST and the Insurance Authority exchanged information and agreed to explore working together that had relevance to Tasks 2.1 and 2.2, and that specifics would be discussed at future meetings.

7. Mark Buntaine et al, "Does the squeaky wheel get more grease? The Direct and Indirect Effects of Citizen Participation on Environmental Governance in China", Working Paper, 5 October 2022, EPIC China, Does the Squeaky Wheel Get More Grease? The Direct and Indirect Effects of Citizen Participation on Environmental Governance in China - EPIC-China [uchicago.cn].

Task 3: FINANCING GREEN INFRASTRUCTURE AND FACILITATING POLICY

As already explained in SER1, the challenge for Task 3 is the complexity of the topic as it relates to many stakeholders in government and the private sector, and that there is a lack of publicly available data for electricity usage in buildings.

General advocacy of retrofitting buildings

A key aspect of the work of the SET for Task 3 has been to raise the general discussion of the topic on the need to decarbonize existing buildings in Hong Kong to contribute to Hong Kong achieving the government's declared energy saving targets in 2035 and 2050. The SET spoke frequently about the general topic in public, as well as wrote Opinion Editorials (Op-Eds) in local news media. While these may not be regarded as strictly aspects of the TBRP, they do help to rally TBRP partners and stakeholders. As such, a list of these speaking engagements and Op-Eds are not included in this report except the following are shown as examples of the overall work of the SET, and that such advocacy work is seen as necessary for the SET going forward.



Op-Ed – Aging buildings problem needs to be addressed aggressively, China Daily, 10 February 2023

Collecting energy usage data and information

The SET has assisted Task 3 to collect all publicly available data on electricity consumption in buildings from:

- Available government sources.
- From published research materials; and
- From relevant institutions, such as Hong Kong Green Building Council.



The Greater Bay Area Sustainable Built Environment Conference 2022, Panel Discussion on 16 December 2022



Urban Land Institute (ULI) – Hong Kong: Back to the Future, Keynote Presentation on 9 March 2023 that including discussion on buildings and retrofits.

The SET has also approached Environment and Ecology Bureau (EEB) and Electrical and Mechanical Services Department (EMSD) and has a good understanding with them about cooperating to access more detailed data from the power companies which are the only institutions with the data.

The SET has approached the power companies – CLP Power and Hongkong Electric (HEC) – directly to explain Task 3 and to see what data they are willing to provide. The SET explained to the senior management of CLP Power on 17 May 2023 about the Task 3 research. The SET requested CLP Power to consider how they might be able to make relevant information on electricity consumption of existing buildings available for the project, as it saw its data as a privacy matter. It was made clear to them that the research could cope with data from types of buildings. CLP Power said it would give it consideration and would revert. A similar request had been made to HEC.

Collecting retrofit cost data

The SET is working with Shui On Management Limited (Shui On) to better understand the various aspects of retrofitting buildings so that the Task 3 research team could have a thorough understanding of the costs involved, as that provides useful technical background, as well as pay-back periods for calculating financing for retrofits. A meeting was arranged in March but due to Covid-19 sickness of the SET team and subsequent travel schedules, a follow-up meeting has been scheduled on 7 August 2023.

Candidates for retrofits

The Library at HKUST, which is used by Task 3 as a reference building for retrofitting is on-going. A meeting was held on 19 June 2023 to pin down the details of retrofitting arrangement and pre-retrofit air quality measurements. The SAT will continue to follow developments.

In response to the request of the Task 3 research team to find more candidates for further research, the SET also lined up HKUST with Jao Tsung-I Academy (JTIA) to explore potential collaboration on indoor air quality improvements and retrofitting. Meetings were held on 13 June 2023 and 30 June 2023 to discuss the arrangement and plan for on-site air quality measurement.



Site visit for planning a JITA pilot study

Carbon credits and retrofitting existing buildings

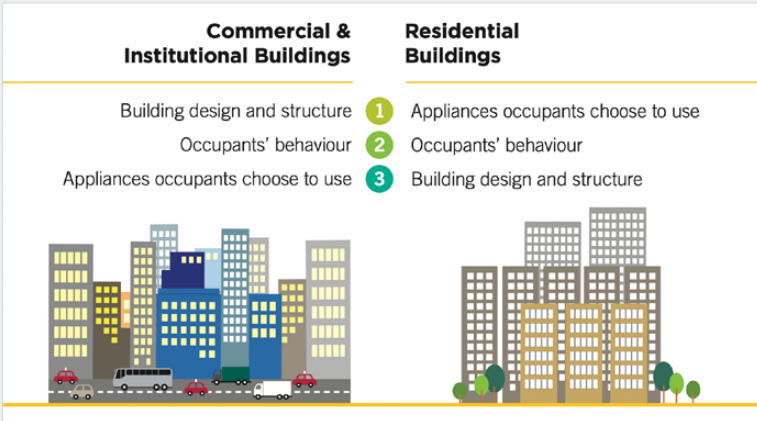
In speaking with professionals in the finance sector, the SET has determined that it should be possible to create carbon credits from projects to retrofit existing buildings where there are significant saving in energy usage. The SET has coordinated various gatherings of stakeholders interested in this topic for further exploration:

- Meeting with the chairman of Great Eagle Holdings (KS Lo), a property developer, and the President of HKGFA (MA Jun), HKUST Adjunct Professor Grace Hui, and John Lo, Founder of Asia Carbon Institute (ACI) on 22 November 2022 to explore carbon credit possibilities.
- Meeting with KS Lo, MA Jun, Grace Hui, Stephanie Lo (Shui On) and Winnie Ho (Secretary of Housing) on 18 March 2023 to explore public housing retrofits and carbon credits.
- Meeting with Winnie Ho, KK Ling (Housing Society) and Grace Hui on 24 April 2023 to explore using Housing Society buildings for retrofits and generating carbon credits.
- Meeting with KK Ling and CS Wai (CEO of Urban Renewal Authority) on 28 April 2023 to discuss building retrofits and generating carbon credits.
- Meeting with Grace Hui, John Lo and Raymond Fung (ACI) to explore putting a framework proposal to Housing Bureau, Housing Society, and Urban Renewal Authority on how to generate carbon credits on 9 May 2023.
- Meeting with the Sustainability Team and the Linked Bonds team of the investment bank JP Morgan was held on 17 May 2023 to explore cooperation on ideas on financing retrofits of existing buildings at scale.
- Meeting with Towngas on 29 May 2023 to discuss (a) the feasibility of creating a major scheme at scale whereby Towngas enables customers to buy Grade 1 gas appliances under the Hong Kong SAR Government's Energy Efficiency Label to save energy and how such a scheme could be financed; and (b) the use of distributed energy supply that could generate carbon credit as an additional revenue source or for operating cost reduction (see box on page 15).
- Meeting with the head of Sustainable Finance at UBS on 27 June 2023 to discuss raising private sector capital for retrofitting buildings.
- A meeting with Winnie Ho, K.K. Ling, C.S. Wai and Grace Hui has been scheduled on 7 July 2023 to discuss the possibility of generating carbon credits from retrofitting public housing.

ELECTRICAL APPLIANCES AND ENERGY SAVING IN BUILDINGS



The HKSAR Government noted in its report *Deepening Energy Saving in Existing Buildings (2017)* that the bulk of the energy used in residential buildings is for powering occupants' electrical appliances. Thus, choosing high efficiency electrical appliances make an appreciable difference in saving energy. Figure 3 from the government report shows the relative energy saving potentials between residential versus commercial-institutional buildings.



Relative energy saving priorities for different types of buildings in Hong Kong (Figure 3 of Deepening Energy Saving in Existing Buildings)

The SET's interest to explore an idea with Towngas was because it supplied gas-powered energy to over 1.5 million customers in Hong Kong and it is also a seller of electrical appliances, such as gas-powered cookers and water heaters. If large schemes could be developed alongside financing schemes to enable its customers to change their appliances to

Grade 1 models (as per the HKSAR Government's energy efficiency labelling scheme), Towngas could estimate what would be the quantity of energy saved at what cost. Moreover, in collaboration with ACI, whether the switch to Grade 1 models would create carbon credits to make the financing more attractive.



HKSAR Government Mandatory Energy Efficiency Labelling Scheme (MEELS)

Task 4: ENABLING TECHNOLOGIES OF GREEN FINANCE

Task 4 has two Sub-Tasks. While both aim to create enabling technologies, they are different in nature and their products and outcomes are expected to be applied differently to help solve problems in the business and finance world:

- Sub-Task 4.1 is developing an enabling technology to track carbon emissions using blockchain and will be useful in the construction industry that will help green finance in this sector; and
- Sub-Task 4.2 is identifying complex non-linear climate risks from the scraping of news around the world to assess their impacts on Hong Kong and the Mainland. This project is expected to be useful for policymakers, specific businesses, and the finance sector, including the insurance industry.

Working with partners – Sub-Task 4.1

The SET works closely with the Sub-Task 4.1 team to track how it is proceeding, especially from the perspective of its partnership with Gammon Construction Limited (Gammon), as this relationship is crucial to the success of the project. The SET also lined up Yau Lee Construction Company to meet team members to share their challenges in using blockchain technologies in their daily operation.

Furthermore, a meeting with China State Construction Engineering Company was held on 26 April 2023 to share their experience on carbon auditing and trading for O-Park 2 Project, which is a government project for the treatment of organic waste. O-PARK2 is one of the carbon offset projects in the first batch of Core Carbon Trading Market established by HKEX.⁸ About 24,000 tonnes of forest carbon credit were purchased to offset the carbon emissions from the construction phases of the civil and structural work of O-Park 2 till June 2022.

Collecting data from around the world – Sub-Task 4.2

The SET works closely with the Sub-Task 4.2 team to track how it is proceeding, especially in scrapping data from news media from around the world. In addition, the team has expressed an interest to receive relevant information from insurance companies that may have received claims for unusual cases. This relationship was established with the Insurance Authority at a meeting on 28 April 2023 (see Chapter 2) and will be followed up going forward.

Task 5: GREEN FINANCE MANPOWER STUDY

The major contribution from the SET to Task 5's work was to identify contacts for their initial survey (already noted in SER1) and for its first report, entitled The Hong Kong Green and Sustainable Finance Talent Development Strategy, to be published and presented on 12 December 2023 at CARE2022 (see Chapter 1). The SET will work with the Task 5 team when its next publication is ready to discuss wider promotion.

The SET was invited by the Hong Kong Institute of Bankers (HKIB) to a meeting on 22 March 2023 to share experience and ideas with them on creating sustainability and climate change courses for bankers in Hong Kong. HKIB works closely with HKMA, and it has the capacity to outreach to all banking institutions in Hong Kong to offer training to employees. HKIB is a useful organization for the TBRP to disseminate future reports.

The Bank of East Asia (BEA) invited HKUST to a follow-up meeting post-CARE2022 on 14 April 2023 to discuss green talent in finance; HKUST's corporate training opportunities for their employees, and internship opportunities for HKUST students in ESG and Fintech.

8. Core Climate was established by HKEX on 28 October 2022. It is a new marketplace that connects capital with climate-related products and opportunities in Hong Kong, Mainland China, Asia and beyond. Core Climate facilitates the trading of carbon credits and instruments. Core Climate participants can source, hold, trade, settle and retire voluntary carbon credits through the Core Climate platform. Carbon credits on the platform come from internationally certified carbon projects from across the world.

Task 6: POLICY DESIGN TO SUPPORT HONG KONG AS A GREEN FINANCE HUB

Under the TBRP, Task 6 has two components. The first is the creation of the SET and its work to assist all the tasks in stakeholder engagements, and the second a separate research team that research into Hong Kong as a green finance hub.

Engagement

To be able to play the engagement role, the SET has had to become familiar with many aspects of green finance. The SET participated in events organized by others, as well as organized events on green finance (beyond CARE2022) that have relevance for the Research Team of Task 6. The following are noteworthy for the period covering SER2:

(i) Green Finance Roundtable on 16 March 2023

The SET was invited to help convene and discuss green finance issues organized by the British Consulate in Hong Kong when several UK-based experts visited Hong Kong. The Roundtable was attended by representatives of the FSTB, SFC, HKGFA and HSBC. The discussion focussed on two topics:

- Disclosure and Taxonomy; and
- Transition planning and finance.

The relationship built between the SET and British Consulate proved useful for the Research Team of Task 6 (see below).

(ii) Transition Finance on 28 June 2023

The SET invited Academy of Finance (AoF, which is an adjunct of HKMA) and HKGFA to co-host a seminar when Ben Weisman of Glasgow Financial Alliance for Net Zero (GFANZ)⁹ visited Hong Kong under a US Consulate programme. The occasion enabled the SET to strengthen relations with existing stakeholders, as well as expand relations with others. It was a successful event with new participants on a less discussed topic. The event and connections were helpful to the Research Team of Task 6.



The HKUST co-hosted the event "Accelerating the Transition to a Net-Zero Global Economy: Regulatory Climate Disclosure and Risk Analysis" with AoF and HKGFA on 28 June 2023.

(iii) HKMA/SFC collaboration on GHG Tool

Chapter 1 has already discussed the collaboration between HKUST and HKMA/SFC on developing a GHG estimation and calculation tool for SMEs in Hong Kong, which could also be used on the mainland. Suffice to say here that such collaboration helps to advance the cause of green finance, as well as strengthen relations between the regulators and the TBRP. The eventual rolling out of the tool should be helpful to Hong Kong in its role as an IGFC, and hence to be noted by the Research Team of Task 6.

9. The Glasgow Financial Alliance for Net Zero (GFANZ) is a global coalition of financial institutions committed to achieving net-zero emissions by 2050 or sooner. It aims to mobilize the financial industry to take urgent action on climate change and support the goals of the Paris Agreement.

Research

With the easing of COVID-19 restrictions, the Task 6 Research Team has been able to hire a Research Assistant, as well as to travel back-and-forth between Hong Kong and the GBA in 2023. This has facilitated better communication between the Task 6 Team with the SET.

The Task 6 Team has sought the assistance of SET to help them with identifying people to conduct interviews in Hong Kong, Singapore, London, and New York. The Task 6 Team already had direct contacts, but they wished to broaden their interviews:

- **Hong Kong:** James Fok (former Chief of Staff at Hong Kong Exchanges and Clearing Limited – HKEX) on 26 April 2023; and Grace Hui (Adjunct Professor at HKUST and former head of sustainability at HKEX) – they had connected directly on various occasions.
- **Singapore:** The SET introduced several individuals and institutions in Singapore, who helped the Task 6 Team to arrange further meetings with others. The Task 6 Team visited Singapore (20 to 24 March 2023) and would submit its own report under the TBRP.
- **London:** The SET had introduced the Task 6 Team to CDP Worldwide in London, as well as the British Consulate in Hong Kong, which had been extremely fruitful in helping to make introductions and arrange many meetings. The Task 6 Team visited London (11 to 16 June 2023) and would submit its own report under the TBRP.
- **New York:** The SET would assist the Task 6 Team with contacts once it decides when to visit.

Having spent a year and a half working on and reflecting on the TBRP, as well as engaging extensively with Project Partners and other stakeholders, the SET draws several observations:

1. SUPPLEMENT BASIC KNOWLEDGE

The basic knowledge in environmental sustainability is relatively thin among the general finance and business sectors, as shown by Task 5. While governments have set climate change related targets and timelines to achieve carbon neutrality by a certain year, and international bodies are promoting GHG disclosure standards, the corporate sector has a lot to do to catch-up on the basics.

Likewise, professionals in science, climate, environmental sustainability, and data management are unfamiliar with finance and business. Cross-disciplinary opportunities are valuable to co-learn and co-create solutions.

2. ROLE OF UNIVERSITIES AND PROFESSIONAL BODIES

The finance sector looks for 'easy fixes' that could be reduced to formulae to determine what is 'green' (which could also lead to accusation of 'greenwashing') when planetary functions are complex with many uncertainties and unknowns. Universities play an important role in providing undergraduates with a foundation in environmental sustainability at the start of their careers. Courses for professionals, whether taught at universities or professional bodies, should include the basics in understanding decarbonization and climate adaptation so professionals can better shape corporate plans, projects, and investments that leads to true sustainability. This may be a point for Task 5 to further consider.

3. ESG DISCLOSURE, FINANCIAL PERFORMANCE, AND POLICY

The ESG trend for companies to disclose climate risks and environmental and social performance will continue, as financial regulators promote them as a policy tool and as global investors demand greater transparency. ESG represent the non-financial performance aspects of a company. The financial performance will still be very important for investors. Government policies will continue to be important to mandate and incentivize capital to be directed towards environmentally sustainable choices although it can be challenging to craft the right policies – bureaucrats may lack market knowledge and dealing with reluctant vested interests can be a deterrent.

Task 3 is a good example of the challenges. The buildings sector is ripe for an extensive policy overhaul so that retrofits and decarbonization could be financially profitable and socially desirable:

- (a) There is no policy requirement for energy data that currently rests with private sector companies to be released. While this may not be an issue in the past, it is an issue in the era of decarbonization where data is key to effectiveness, economic competitiveness, and profitability.
- (b) Changing the current circumstances require a new policy and legislation to mandate the release of information. There may be bureaucratic hesitation to act because its importance (noted above) has yet to be fully recognized. The lack of fulsome data prevents the government from making better policies to make the economy more competitive through achieving high energy efficiency and prevents the market from creating new ideas and energy-related services.
- (c) Retrofitting buildings is universally recognized as important in decarbonizing cities. The relevant codes and regulations for buildings should be upgraded – Hong Kong's codes and regulations are lagging other jurisdictions. As legislation is already in place, it only needs revision, which is a relatively easy process, but it does not appear that this is a priority with government.

- (d) Data must be in digital form so that they could be easily accessed and used. At present, not only is there a lack of data but the available data is not easy to find. It may also be concluded that there is still relatively little interest in energy data as a vital source to transform technology, management, and social interactions and lifestyle.
- (e) From a finance perspective, buildings retrofit expenditures are not seen as sufficiently attractive even though the pay-back could be just a few years, hence the SET's desire to explore whether carbon credits could play a role in both commercial buildings and public housing. Moreover, retrofits may be more attractive still if seen through the lens of social sustainability gains (E "S" G) due to improved health of occupants as per Task 3, which may attract new investors to property companies.

4. INSURANCE

Hong Kong aspires to be a center for insurance services and the Hong Kong Insurance Authority has been charged by the HKSAR Government with expanding the insurance business in Hong Kong in types and depth of services. The authority is also a member of the Cross-Agency Steering Group on Climate Change alongside HKMA, SFC and HKEX. Task 2 and Task 4.2 should be of interest to the insurance sector and the TBRP could play a role in beefing up Hong Kong capacity in applying its knowledge in climate science and data, in creating derivative products to diversify risks, and the research aspect of Task 6 might also include insurance as it is a part of financial services.

5. HONG KONG AS IFC

In exploring the issue of what policies and measures may be needed for Hong Kong to be a leading international green finance center, it occurred to the SET that Hong Kong would need to continue to improve itself as an IFC overall. While it is beyond the TBRP to go into the depth of what it takes for Hong Kong to strengthen its role as an IFC, this is a general point not to be overlooked in the research aspect of Task 6.

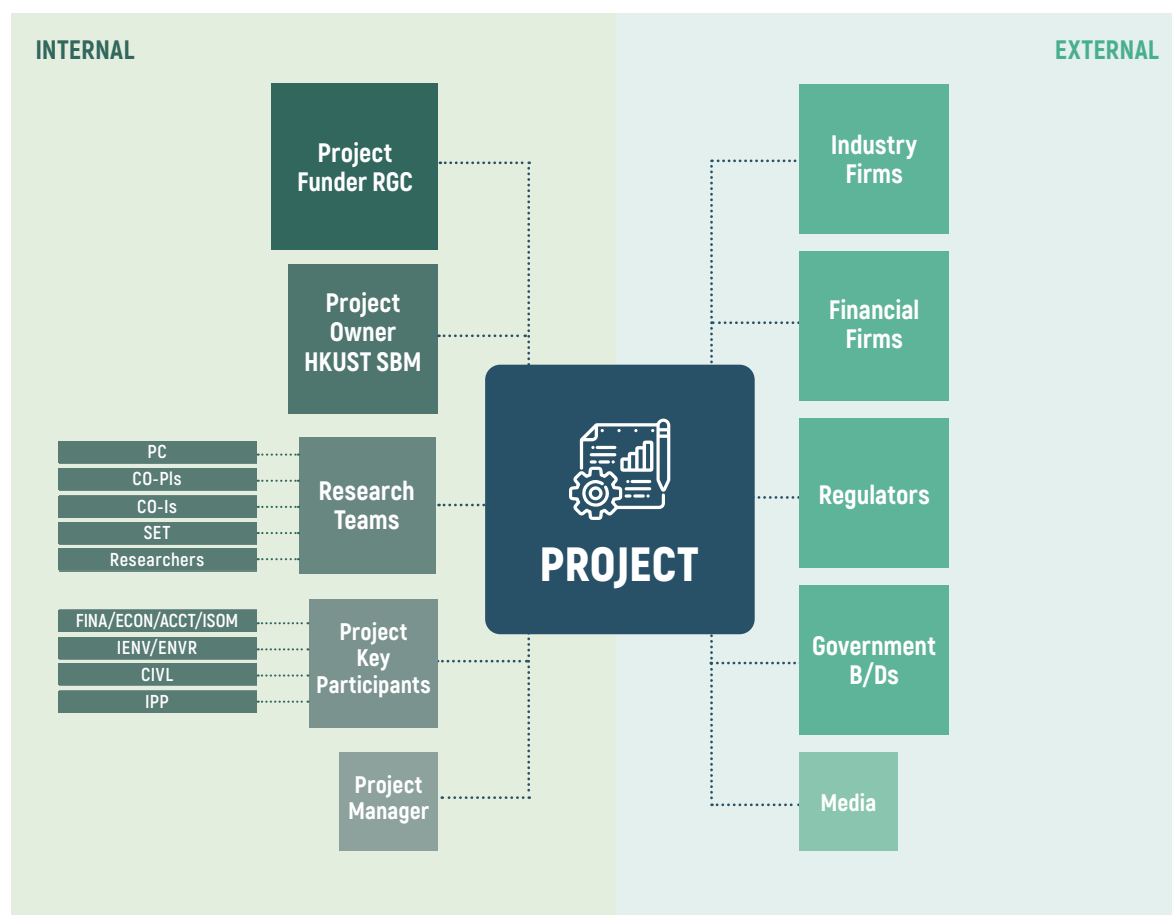
APPENDICES

I: INTERNAL STAKEHOLDER'S PROFILES

As per SER1, the Stakeholder Engagement Process conducted as a part of Task 6 is based on how the SET views the groups of Internal Stakeholders (Appendix I) and External Stakeholders (Appendix II). The following diagram (shown in SER1 as Figure 4) represents how we structure these two groups of stakeholders for reporting purposes. The SET engages regularly with the Task Teams, as well

as connect the teams with each other where relevant and with the TBRP's Project Manager (Appendix III), as well as engage actively and frequently with a growing group of external parties relevant to the TBRP (Appendix IV), including participating in events that helps to promote aspects of the TBRP (Appendix V).

THE PROJECT'S STAKEHOLDER CONTEXT



Internal Stakeholder	Group	Interests
Project Funder	Research Grants Council (RGC), University Grants Committee	It is the funding body for the Project which has an oversight role to the Project.
Project Owner	School of Business and Management (SBM), HKUST	To put together an interdisciplinary research team of scholars and experts from HKUST and other universities to advance the intellectual frontier of green finance in Hong Kong, and to deliver on the Project.
Project Key Participants	Business <ul style="list-style-type: none"> - Department of Accounting (ACCT) - Department of Economics (ECON) - Department of Finance (FINA) - Department of Information Systems, Business Statistics and Operation (ISOM) 	To engage in the Project and produce research that can command academic and market attention. Where policy change is needed, to be able to influence policy.
	Environment <ul style="list-style-type: none"> - Division of Environment and Sustainability (ENVR) - Institute for the Environment (IENV) 	To engage in the Project and produce research that can command academic attention, as well as to solve specific applied problems, as well as to (a) influence policy where needed; and (b) design and operate the Stakeholder Engagement Process for the Project.
	Engineering <ul style="list-style-type: none"> - Department of Civil and Environmental Engineering (CIVL) 	To engage in the Project and produce research that can command academic attention, as well as to solve specific applied problems.
	Public Policy <ul style="list-style-type: none"> - Institute for Public Policy (IPP) 	To engage in the Project and produce research that can command academic and market attention. Where policy change is needed to strengthen Hong Kong's role as a GIFC, to be able to influence policy through engaging in this Project.
Research Team	Project Coordinator (PC)	Ensure the quality of the Project outputs and deliverables and to deliver them according to RGC's timelines. Forming and convening the Executive Committee to monitor and supervise the Project.
	Co-Principal Investigators (Co-PIs)	Responsible for the delivery of the research, and overall management of their respective areas of investigation.
	Co-Investigators (Co-Is)	Serve as senior members of the team to deliver on the research of their respective areas.
	Stakeholder Engagement Team (SET)	Responsible for the design and implementation of the Stakeholder Engagement Process for the Project, working closely with all the Task Teams as well as to maintain relationships with External Stakeholders.
	Researchers	Conduct research support, including data collection, analysis and compelling to Co-PI and Co-I.
Project Head Administrator	Project Manager (PM)	Provide administrative support for the Project to ensure good governance.

II: EXTERNAL STAKEHOLDERS PROFILES (PROJECT PARTNERS AND OTHERS)

A. Financial Institutions

Stakeholder	Bank of International Settlement Innovation Hub (BIS) – 01
Group	Financial Institutions
Project relationship	Project Partner
Profile	Moderate level of influence, moderate level of interest

Background

BIS fosters innovation and greater collaboration amongst the central banking community globally. It aims to enhance the understanding of financial technology, and aid development of innovative solutions to benefit and enhance the financial system. Green finance is one of the six core themes structured under BIS's work program.¹

Interests

BIS would be interested in those aspects where there is an innovation component that relates to the financial sector, such as Sub-Task 1.2, 2.2, 4.1 and 4.2.

B. Government Bureaux and Departments

Stakeholder	Financial Services Development Council (FSDC) – 02
Group	Government Bureaux and Departments
Project relationship	Project Partner
Profile	Moderate level of influence and interest

Background

FSDC is established by the Hong Kong Government as a high-level and cross-sectoral advisory body to engage the industry and formulate proposals to promote the further development of Hong Kong's financial services industry and to map out the strategic direction for the development.²

Interests

FSDC conducts policy research and industry surveys for formulating new proposal to the Government and regulators, also supports financial industry in developing competence and knowledge of its practitioners.³

Task/Sub-Tasks that bring insights and recommendations on policy, industry feedbacks and talent development can engage FSDC for research collaboration. They could be interested in the whole project.

1. See <https://www.bis.org/about/bisih/topics.htm>

2. See <https://waifc.finance/profiles/hong-kong-financial-services-development-council-fsdc/>

3. See <https://www.legco.gov.hk/yr2022/english/panels/fa/papers/fa20220503cb1-217-4-e.pdf>

II: EXTERNAL STAKEHOLDERS PROFILES (PROJECT PARTNERS AND OTHERS)

B. Government Bureaux and Departments

Stakeholder	Buildings Department (BD) – 03
Group	Government Bureaux and Departments
Project relationship	Potential Project Partner
Profile	Low level of influence and interest

Background

BD is responsible for promoting building safety; setting and enforcing safety, health and environmental standards for private buildings; as well as improving the quality of building development.⁴

Interests

BD has all the build and design records for existing and new private buildings as it is the authority to approve the relevant plans and system designs.

These information will be useful for Tasks 3 and 4.1 to understand the design and built of various building, including construction materials, building and system components.

Stakeholder	Electrical and Mechanical Services Department (EMSD) – 04
Group	Government Bureaux and Departments
Project relationship	Potential Project Partner
Profile	Moderate level of influence and interest

Background

EMSD is a regulatory body and law enforcement department with regard to electricity, gas, lift, escalator and related electricity and mechanical (E&M) safety areas. It also provides E&M engineering solutions and services to government departments and public bodies.⁵

Interests

EMSD supports the government to promote energy efficiency and energy conservation, as well as improve indoor air quality in buildings. Their Energy Efficiency Office spearheads a wide range of relevant programs, including energy management through engaging with various partners.⁶

The buildings and energy datasets managed by EMSD will be very useful for the projection of energy saving potential of buildings. Task 3 can proactively engage EMSD and explore partnership opportunities.

4. See <https://www.bd.gov.hk/en/about-us/welcome-message/index.html>

5. See https://www.emsd.gov.hk/en/about_us/general_faqs/

6. See https://www.emsd.gov.hk/en/energy_efficiency/about_energy_efficiency_and_conservation/

II: EXTERNAL STAKEHOLDERS PROFILES (PROJECT PARTNERS AND OTHERS)

B. Government Bureaux and Departments

Stakeholder	Environment and Ecology Bureau (EEB) – 05
Group	Government Bureaux and Departments
Project relationship	Potential Project Partner
Profile	High level of influence, high level of interest

Background

EEB consolidates polices and work related to environmental protection, conservation of natural ecology, environmental hygiene, food safety, agriculture and fisheries and animal welfare as well as to driving climate action and promoting biodiversity in Hong Kong.⁷

EEB is a member of the CASG.

Interests

EEB announced the *Hong Kong's Climate Action Plan 2050* in October 2021 that sets out four major decarbonization strategies in aspects of net-zero electricity generation, energy saving and green buildings, green transport, and waste reduction.

Tasks/Sub-Tasks related to environmental and climate risks analysis, green technologies that help reduce city's carbon emissions, as well as the implications on climate change policies would have EEB's interests. Relevant tasks are 3, 4.1 and 4.2.

Stakeholder	Financial Services and the Treasury Bureau (FSTB) – 06
Group	Government Bureaux and Departments
Project relationship	Potential Project Partner
Profile	High level of influence, high level of interest

Background

FSTB consolidates Hong Kong status as a global financial centre, an asset and wealth management centre and an offshore RMB business hub, seeking breakthroughs in green finance and financial technology development.

FSTB is a member of the Green and Sustainable Finance Cross-Agency Steering Group (CASG).

Interests

FSTB works closely with market regulators and industry people to facilitate matching between international capital and quality green projects as well as promote the green economy transformation.⁸

Tasks/Sub-Tasks related to green bond market development, enhancing talent and data resources for the financial industry, as well as market regulations including taxonomy, climate risks disclosure can actively engage FSTB. Relevant tasks are 1.2, 1.3, 1.4, 5 and 6.

7. See https://www.eeb.gov.hk/en/message_index.html

8. See <https://www.legco.gov.hk/yr2022/english/panels/fa/papers/fa20221003cb1-638-3-e.pdf>

II: EXTERNAL STAKEHOLDERS PROFILES (PROJECT PARTNERS AND OTHERS)

B. Government Bureaux and Departments

Stakeholder	Home Affairs Department (HAD) – 07
Group	Government Bureaux and Departments
Project relationship	Potential Project Partner
Profile	Low level of influence and interest

Background

HAD is responsible for enhancing communication between the Government and the public to facilitate the development of District Administration. The major function of HAD is also to reflect the community's views and aspirations to the Government so that timely and appropriate responses can be made.

Interests

HAD has a central database with publicly available information of all private buildings across all districts, such as number of units, storeys and year built, as well as information on building organizations.

This information will be useful for Task 3 to understand the history and current status of various buildings.

Stakeholder	Hong Kong Observatory (HKO) – 08
Group	Government Bureaux and Departments
Project relationship	Potential Project Partner
Profile	Moderate level of influence and interest

Background

HKO is responsible for monitoring and forecasting weather, as well as issuing warnings on weather-related hazards. It also monitors and assesses radiation levels, and provides meteorological and geophysical services to meet the needs of the public and the aviation, industrial, shipping and engineering sectors.⁹

Interests

HKO provides scientific input to climate change reports in Hong Kong, and facilitates stakeholders and policy-makers in planning and implementing climate policies and actions based on the latest assessment of climate trends and projections.¹⁰

Tasks/Sub-Tasks that involve climate risks modelling, climate science, prediction and projection of extreme weather events can engage for providing climatological data and relevant professional advice. Relevant tasks are 1.3, 2.1 and 4.2.

9. See https://www.hko.gov.hk/en/about_hko/aboutus.htm

10. See https://www.hko.gov.hk/en/climate_change/combating_climate_change.htm

II: EXTERNAL STAKEHOLDERS PROFILES (PROJECT PARTNERS AND OTHERS)

B. Government Bureaux and Departments

Stakeholder	Housing Bureau [HB] - 09
Group	Government Bureaux and Departments
Project relationship	Potential Project Partner
Profile	High level of influence, high level of interest

Background

HB formulates housing policies and has an implementation arm (Housing Authority). It manages land supply and provides public housing of various types.¹¹

Interests

HB sets housing policies and provides public housing for about 30% of the population in Hong Kong. It oversees the management of a very large housing stock. HB has an interest to decarbonize public housing and is interested to explore whether carbon credits could help to lower costs.

Task/Sub-Tasks related to financing green infrastructure and facilitating policy. Relevant task is 3.

11. See <https://www.hb.gov.hk/eng/aboutus/welcome/index.html>

II: EXTERNAL STAKEHOLDERS PROFILES (PROJECT PARTNERS AND OTHERS)

C. Regulators/Statutory Bodies

Stakeholder	Hong Kong Exchanges and Clearing Limited (HKEX) – 10
Group	Regulators
Project relationship	Project Partner
Profile	High level of influence, high level of interest

Background

HKEX is the operator of Hong Kong's central securities and derivatives marketplace and the front-line regulator of listed issuers. It regulates listed issuers; administers listing, trading and clearing rules; and provides services at the wholesale level to customers of the exchanges and clearing houses.¹²

HKEX is a member of the CASG.

Interests

HKEX sets the listing rule and provides guidance to listed companies on climate disclosures and ESG reporting.¹³ With the launch of the *Sustainable and Green Exchange* [STAGE],¹⁴ it also provides an online database for investor and asset managers with access and transparency on sustainable-themed products in Asia.

Tasks/Sub-Tasks related to listed firms in Hong Kong and sustainable financial products such as derivatives and bonds can consult HKEX as appropriate. The relevant tasks are 1.1, 1.2, 1.4, 2.2, 5 and 6.

Stakeholder	Hong Kong Monetary Authority (HKMA) – 11
Group	Regulators
Project relationship	Project Partner
Profile	High level of influence, high level of interest

Background

HKMA is Hong Kong's central banking institution with four main policy objectives, including to maintain currency stability, promote the stability and integrity of financial system, help maintain Hong Kong's status as an international financial centre as well as manage the Exchange Fund.¹⁵

HKMA is the co-chair of the CASG with SFC.

Interests

The future work of HKMA focuses on talent development, data-related work of the Centre for Green and Sustainable Finance, taxonomies, climate-related disclosures and sustainability reporting as well as carbon market opportunities.¹⁶ It also promotes green and sustainable banking to help banking sector managing and reducing climate risks.

Tasks/Sub-Tasks related to abovementioned and works with banking sectors can engage HKMA actively. Relevant tasks are 1.3, 5 and 6.

12. See https://www.hkex.com.hk/Global/Exchange/FAQ/Getting-Started/Regulation-of-the-Hong-Kong-Market?sc_lang=en#collapse-1

13. See <https://sseinitiative.org/stock-exchange/hkex/>

14. See https://www.hkex.com.hk/Join-Our-Market/Sustainable-Finance/HKEX-STAGE?sc_lang=en

15. See <https://www.hkma.gov.hk/media/eng/doc/key-functions/banking-stability/guide-authorization/Chapter-1.pdf>

16. See <https://www.legco.gov.hk/yr2022/english/panels/fa/papers/fa20220207cb1-56-1-e.pdf>

II: EXTERNAL STAKEHOLDERS PROFILES (PROJECT PARTNERS AND OTHERS)

C. Regulators/Statutory Bodies

Stakeholder	Securities and Futures Commission (SFC) – 12
Group	Regulators
Project relationship	Project Partner
Profile	High level of influence, high level of interest

Background

SFC is the principal regulator of Hong Kong's securities and futures markets, which is an independent statutory body responsible for administering the laws governing the securities and futures markets in Hong Kong and facilitating the development of these markets. Parties regulated by the SFC include HKEX and its subsidiaries.¹⁷

Interests

SFC develops the regulatory framework for green finance in Hong Kong with three focus areas: corporate disclosures, monitoring the implementation of and enhancing existing measures and a regulatory framework for carbon markets. It also published the *Agenda for Green and Sustainable Finance* in August 2022 that outlines its further steps to support Hong Kong's role as the Green International Finance Centre.

Research related to regulatory policy and new financial products should engage and seek advice from SFC. Relevant tasks are 1.3, 2.2, 5.6.

Stakeholder	Insurance Authority (IA) – 13
Group	Regulators
Project relationship	Potential Project Partner
Profile	High level of influence, moderate level of interest

Background

IA is an independent insurance regulator to modernize the insurance industry regulatory infrastructure to facilitate the stable development of the industry, provide better protection for policy holders, supervise insurance companies, and align with international practice that insurance regulators should be financially and operationally independent of the Government.¹⁸

IA is a member of the CASG.

Interests

IA drives sustainable investing by turning Hong Kong insurers green and help shape the behavior of asset owners and managers to identify, analyze and mitigate their risk exposures to climate change.

With a view that Sub-Task 2.2 will need to analyze the competitive edges of weather derivatives versus insurance products, it makes IA a good partner to be engaged for analysing the green insurance market in Hong Kong on risk management.

17. See https://www.gov.hk/en/about/abouthk/factsheets/docs/financial_services.pdf

18. See https://www.gov.hk/en/about/abouthk/factsheets/docs/financial_services.pdf

II: EXTERNAL STAKEHOLDERS PROFILES (PROJECT PARTNERS AND OTHERS)

C. Regulators/Statutory Bodies

Stakeholder	Urban Renewal Authority [URA] - 14
Group	Statutory Bodies
Project relationship	Potential Project Partner
Profile	High level of influence, high level of interest

Background

URA is a statutory body to undertake, encourage, promote and facilitate the urban regeneration. It is tasked to adopt "Redevelopment" and "Rehabilitation" as its core businesses under the urban renewal strategy comprising redevelopment, rehabilitation, heritage preservation and revitalization. Its goal is to improve the liveability of older districts, beautify the neighborhood and slow down the pace of urban decay.¹⁹

Interests

URA is committed to achieve sustainability through various stages of urban renewal from its policies and operations. It pursues 'good' growth under a balanced and sustainable approach to renew Hong Kong. Its sustainable urban renewal strategy is evidenced by the new, smart and green buildings and revitalisation and maintenance of existing buildings. It has an interest to decarbonize urban renewal projects and generate revenue from viable means like carbon trading.

Task/Sub-Tasks related to financing green infrastructure and facilitating policy. Relevant task is 3.

Stakeholder	Housing Society [HS] - 15
Group	Statutory Bodies
Project relationship	Potential Project Partner
Profile	High level of influence, high level of interest

Background

HS is a statutory body tasked to providing affordable housing. It has been launching various housing schemes and services to address the changing needs of the community from providing rental units and redeveloping old buildings in urban areas to assisting people to achieve homeownership and pioneering elderly housings.²⁰

Interests

HS has implemented over 100 projects providing more than 74,000 resident units. Given such huge housing stock, HS has an interest to decarbonize its housing projects and generate revenue from viable means like carbon trading.

Task/Sub-Tasks related to financing green infrastructure and facilitating policy. Relevant task is 3.

19. See <https://www.ura.org.hk/en/about-ura>

20. See <https://www.hkhs.com/en/about-us/chairman-msg>

II: EXTERNAL STAKEHOLDERS PROFILES (PROJECT PARTNERS AND OTHERS)

D. Professional Bodies/NGOs

Stakeholder	Hong Kong Green Building Council (HKGBC) – 16
Group	Professional Bodies/NGOs
Project relationship	Project Partner
Profile	Moderate level of influence and interest

Background

HKGBC is a non-profit, member-led organization/public body which strives to promote the standard and development of sustainable buildings in Hong Kong, leading Hong Kong to achieve carbon neutrality by 2050 and to become a world's exemplar of green building development.

Interests

HKGBC offers assessments of building sustainability performance and certification service to assess sustainable building and construction materials and products. *The BEAM Plus*²¹ and *CIC Green Product Certification*²² are developed to evaluate building performance and building and construction materials/products' carbon footprint. It would be an important partner of Task 3 and Sub-Task 4.1.

Stakeholder	Hong Kong Green Finance Association (HKGFA) – 17
Group	Professional Bodies/NGOs
Project relationship	Project Partner
Profile	High level of influence, high level of interest

Background

HKGFA creates a platform that offers channels and opportunities to facilitate the development of green finance and sustainable investments in Hong Kong and beyond.²³

Interests

HKGFA promotes mobilisation of both public and private sectors resources and talents, develops green finance policies in Hong Kong and promote green finance business and product innovation within financial institutions.

It is the pivotal partner of Task 5 and 6 for conducting industry surveys and proposing new policy and green infrastructure.

21. See <https://www.hkgbc.org.hk/eng/beam-plus/introduction/index.jsp>

22. See <http://cicgpc.hkgbc.org.hk/subpagex.php?serial=92>

23. See <https://www.hkgreenfinance.org/association-overview/>

II: EXTERNAL STAKEHOLDERS PROFILES (PROJECT PARTNERS AND OTHERS)

D. Professional Bodies/NGOs

Stakeholder	Hong Kong Institute of Qualified Environmental Professionals (HKIQEP) – 18
Group	Professional Bodies/NGOs
Project relationship	Project Partner
Profile	Low level of influence, high level of interest

Background

HKIQEP aims to support Hong Kong's reputation and position as an international leader in environmental management, and in ensuring the quality of work conducted across the growing environmental field in Hong Kong.²⁴

Interests

As the members of HKIQEP are professionals working in the field of the environment, they will wish to know about the Project in general terms. They are a useful body for the dissemination of research arising from the Project, as well as a source of expertise to draw upon when needed.

Stakeholder	Hong Kong Quality Assurance Agency (HKQAA) – 19
Group	Professional Bodies/NGOs
Project relationship	Project Partner
Profile	Moderate level of influence, low level of interest

Background

HKQAA is a non-profit-distributing organization by the Hong Kong Government. It helps industry and commerce in the development of quality, environmental, safety, hygiene, social and other management systems.

Interests

HKQAA provides third-party conformity assessments on bonds, loans and ESG funds through its Green and Finance Certification Scheme,²⁵ to direct capital flows towards green and sustainable uses. The *HKQAA Sustainability Ratings and Research Platform* is also developed in collaboration with Hang Seng Indexes to provide listed companies and general public with sustainability rating and research content.²⁶

Sub-Task 1.2 requires to connect rating agency and Sub-Task 1.4 may involve rating systems that evaluate firms with green bond issuance may engage HKQAA for advice.

24. See <https://hkiqep.org/>

25. See https://www.hkqaa.org/en_certservice.php?catid=26

26. See <https://srr.hkqaa.org/>

II: EXTERNAL STAKEHOLDERS PROFILES (PROJECT PARTNERS AND OTHERS)

D. Professional Bodies/NGOs

Stakeholder Construction Industry Council (CIC) – 20

Group Professional Bodies/NGOs

Project relationship Potential Project Partner

Profile Moderate level of influence, low level of interest

Background

CIC is a statutory body representing the construction industry. The main functions are to forge consensus on long-term strategic issues, convey the industry's needs and aspirations to the Government, provide professional training and registration services, and serve as a communication channel.²⁷

Interests

The *CIC Carbon Assessment Tool*,²⁸ launched in 2020, acts as an online platform for construction industry to assess the embodied carbon emissions of construction materials of buildings and infrastructure. It helps evaluate and reduce carbon emissions.

Tasks/Sub-Tasks related to construction and building such as Task 3 and Sub-Task 4.1 can engage CIC to seek industry advice and as a source of data to draw upon when needed.

Stakeholder Asia Carbon Institute (ACI) – 21

Group Professional Bodies/NGOs

Project relationship Potential Project Partner

Profile High level of influence, high level of interest

Background

ACI is a new leading Standard Organisation for voluntary carbon credit focusing on Technology-based and Urban-based solutions. It aims to help accelerate the transition towards climate neutral economy by creating a creditable, transparent and financially inclusive carbon credit certification standard.²⁹

Interests

ACI will launch a tailor-made carbon credit certification standard in Hong Kong by mid 2023. This will facilitate local project developers to initiate carbon credit projects as a revenue source.

Task/Sub-Tasks related to financing green infrastructure and facilitating policy. Relevant task is 3.

27. See https://www.cic.hk/files/page/10421/08_About_the_Council_E.pdf

28. See <https://cat.cic.hk/>

29. See <https://asiacarboninstitute.org/>

II: EXTERNAL STAKEHOLDERS PROFILES (PROJECT PARTNERS AND OTHERS)

E. Industry Firms

Stakeholder	Gammon Construction Limited (Gammon) - 22
Group	Industry Firms
Project relationship	Project Partner
Profile	High level of influence, high level of interest

Background

Gammon is a Hong Kong construction and engineering constructor with business focuses on civil, building, foundations, electrical and mechanical, facades and interiors works and design across China and Southeast Asia.

Interests

Gammon experiences strives reduce carbon emissions of their construction projects by reducing the amount of cement used, wise use of construction materials with lower embodied carbon as a result to reduce project's carbon footprints and costs.

Sub-Task 4.1 has secured partnership with Gammon for building the technology on tracking the carbon footprints by blockchain system. The in-depth tracking and analysis can also ensure these construction materials meet the standards.

Stakeholder	Link Real Estate Investment Trust (LINK) - 23
Group	Industry Firms
Project relationship	Project Partner
Profile	Moderate level of influence and interest

Background

LINK is the largest real estate investment trust in Asia, a real estate investor and asset manager which is listed in Hong Kong. LINK invests and manages a diversified portfolio comprising retail facilities, car parks, offices and logistics centres. A majority of its investment portfolio is in Hong Kong.

Interests

LINK is committed to achieving net-zero by 2035 that requires to progressively reduce and avoid carbon emissions through enhancing efficiency and investing in new technologies. They issued green bonds and adopted blockchain technology in a solar project in recent years.

Tasks/Sub-Tasks that related to listed firms, property/building owner, green bonds issuer and blockchain technologies such as 1.1, 1.2, 1.4, 3 and 4.1 can engage and consult LINK.

II: EXTERNAL STAKEHOLDERS PROFILES (PROJECT PARTNERS AND OTHERS)

E. Industry Firms

Stakeholder	Cathay Pacific Airways (CX) - 24
Group	Industry Firms
Project relationship	Potential Project Partner
Profile	Low level of influence and interest

Background

CX is the flag carrier which owns hundreds of aircraft. The Group also makes investments on catering, laundry, groundhandling and cargo terminal companies. Its corporate headquarters and cargo terminal are situated at Hong Kong International Airport. It is a HK-listed company.

Interests

CX recognizes climate change risk as one of the top 20 risks the Group is facing. They are exploring possible measures to manage this risk to ensure their operation continues to thrive despite the uncertain impacts of climate change on aviation industry.³⁰

Task/Sub-Tasks related to climate risks, extreme weather event projection and products which are helpful to manage business risks can seek advice from CX, such as Sub-Task 1.1, 1.2, 2.1 and 2.2.

Stakeholder	MTR Corporation Limited (MTR) - 25
Group	Industry Firms
Project relationship	Potential Project Partner
Profile	Moderate level of influence and interest

Background

MTR is a railway operator and property developer which is a Hong Kong listed company. The HKSAR Government is the majority shareholder of the Corporation.

Interests

MTR operates a predominantly rail based transportation system, develops and manage many residential and commercial properties in Hong Kong. MTR has already incorporated climate risks into their Enterprise Risk Management framework, issued green bonds to finance relevant project.³¹

MTR could be a potential important partner for Sub-Task 2.2 as they want to understand what kind of climate risks a transport operator concerns. As a listed company developer/building owner and green bonds issuer, their advice would also be helpful for Tasks/Sub-Task such as 1.1, 1.2, 1.4 and 3.

30. See https://sustainability.cathaypacific.com/wp-content/uploads/2022/05/Cathay_Pacific_SDR_2021_EN_Final.pdf

31. See https://www.mtr.com.hk/sustainability/2021/en/pdf/MTR_CDP_Response_2021.pdf

II: EXTERNAL STAKEHOLDERS PROFILES (PROJECT PARTNERS AND OTHERS)

E. Industry Firms

Stakeholder	Sino Group (SINO) – 26
Group	Industry Firms
Project relationship	Potential Project Partner
Profile	Low level of influence, moderate level of interest

Background

SINO is a property developer with core businesses in property development and investment. It comprises three listed companies in Hong Kong with business spans across China (Hong Kong and the Mainland), Singapore and Australia.

Interests

SINO has pledged to achieve net zero carbon emissions by 2050 and improving energy efficiency, investing in sustainable buildings and harnessing new technology.³² They are interested in building retrofits to save energy and carbon.

Tasks/Sub-Tasks that related to listed firms, developer, building owner such as 1.1, 1.2, 3 can engage SINO.

Stakeholder	Sun Hung Kai Properties (SHK) – 27
Group	Industry Firms
Project relationship	Potential Project Partner
Profile	Low level of influence, moderate level of interest

Background

SHK is one of the largest property developers in Hong Kong. It develops residential projects and owns an extensive network of shopping malls, offices, hotel and sizeable land bank. It is a HK-listed company.

Interests

SHK aims for sustainable development in planning, design, materials sourcing and landscaping to save energy, reduce waste and create a better environment.³³ They are interested in building retrofits to save energy and carbon.

Tasks/Sub-Tasks that related to listed firms, developer, building owner such as 1.1, 1.2, 3 can engage SHK.

32. See [https://www.sino.com/assets/20a53f0a-15c8-0029-b8df-e495023b403f/3d7e3c51-1bd7-481c-b716-b7e94d2c2bb3/Sino%20Land%20Company%20Limited%20Sustainability%20Report%202021%20\[English\].pdf](https://www.sino.com/assets/20a53f0a-15c8-0029-b8df-e495023b403f/3d7e3c51-1bd7-481c-b716-b7e94d2c2bb3/Sino%20Land%20Company%20Limited%20Sustainability%20Report%202021%20[English].pdf)

33. See <https://www1.hkexnews.hk/listedco/listconews/sehk/2021/1130/2021113000479.pdf>

II: EXTERNAL STAKEHOLDERS PROFILES (PROJECT PARTNERS AND OTHERS)

E. Industry Firms

Stakeholder	Swire Properties Limited [SPL] – 28
Group	Industry Firms
Project relationship	Potential Project Partner
Profile	Low level of influence and interest

Background

SPL is a property developer that develops and manages commercial, retail, hotels and residential properties with investments in Hong Kong, the Mainland, Singapore and the US. It is a HK-listed company.

Interests

SPL completed a comprehensive climate risk assessment in 2020 to identify the key risks posed by climate change to their business operations as well as business opportunities that may arise from new climatic conditions.

Sub-Tasks related to how to diverse climate risks to their business and reduce costs to manage these risks can seek advice from SPL, for example Sub-Task 1.2, 2.1 and 2.2.

Stakeholder	CLP Power Hong Kong Ltd. [CLP] – 29
Group	Industry Firms
Project relationship	Potential Project Partner
Profile	Medium level of interest

Background

CLP operates a power business in Asia, providing electricity to more than 80% of population in Hong Kong. It has data on energy consumption that is not publicly released. Its data is useful to assess the potentials arising from retrofitting buildings in Hong Kong, but it is difficult to extract the data from it.³⁴

Interests

The energy datasets managed by CLP would be useful for the projection of energy saving potential from retrofitting existing buildings in Task 3.

34. See <https://www.clp.com.hk/en/about-clp>

II: EXTERNAL STAKEHOLDERS PROFILES (PROJECT PARTNERS AND OTHERS)

E. Industry Firms

Stakeholder	Hongkong Electric [HEC] – 30
Group	Industry Firms
Project relationship	Potential Project Partner
Profile	Medium level of interest

Background

HEC provides electricity to about 20% of population in Hong Kong. It has data on energy consumption that is not publicly released. Its data is useful to assess the potentials arising from retrofitting buildings in Hong Kong, but it is difficult to extract the data from it.³⁵

Interests

The energy datasets managed by HEC will be very useful for the projection of energy saving potential from retrofitting existing buildings in Task 3.

Stakeholder	Hong Kong and China Gas Co. Ltd. [Towngas] – 31
Group	Industry Firms
Project relationship	Potential Project Partner
Profile	Medium to high level of interest

Background

Towngas supplies town gas to over 1.9 million customers in Hong Kong and sells gas appliances. Currently, it has more than 600 projects in Mainland China across 28 provincial regions.³⁶ It also focuses on the development of new energy projects that are low in emissions and pollution, covering clean coal chemical business, liquefaction of methane etc.

Interests

Towngas serves residential, commercial and industrial customers. In addition to gas supply, they also offer total solution service, ranging from comprehensive after-sales services to a wide variety of gas appliances. There may be opportunities for it to improve its ESG rating and/or obtain carbon credits if it could develop schemes to enable its customers to switch to high efficiency appliances, which could add to Task 3.

35. See <https://www.hkelectric.com/en/our-operations/scheme-of-control/corporate-information-brochure/2021-22>

36. See <https://www.towngas.com/en/About-Us/Hong-Kong-Gas-Business>

III: RECORD OF INTERNAL STAKEHOLDER COMMUNICATION

Task/ Subtask	Meetings	Group	Stakeholders
All	9 November 2021	All	Prof. Chu Zhang (PC), Prof. Zhanhui Chen (Co-PI), Prof. Darwin Choi (Co-PI), Prof. Jimmy Fung (Co-PI), Prof. Guojun He (Co-PI), Prof. Allen Huang (Co-PI), Prof. Kai-Lung Hui (Co-PI), Prof. Eun-Soon Im (Co-PI), Prof. Alexis Lau (Co-PI), Prof. Yingying Li (Co-PI), Prof. Christine Loh (Co-PI), Prof. Abhiroop Mukherjee (Co-PI), Prof. Yoshio Nozawa (Co-PI), Prof. Kar Yan Tam (Co-PI), Prof. Ye Qi (Co-PI), Ms. Coco Du (Co-I), Prof. Alminas Zaldokas (Co-PI), Prof. Lawrence Delina (Co-I), Prof. Veronique Lafon-Vinais (Co-I), Prof. Shun Cheng Lee (Co-I), Prof. Xiaoming Shi (Co-I), Prof. Benjamin Steuer (Co-I) Others: Prof. Keith Chan, Ms. Helen Chen, Ms. Olivia To, Prof. Eyub Yegen, Ms. Christy Yeung
1.1	31 August 2022	SBM, CUHK	Prof. Christine Loh (SET), Ms. Olivia To (SET), Prof. Abhiroop Mukherjee (Co-PI), Prof. Darwin Choi (Co-PI)
1.2	8 August 2022	HKU	Prof. Christine Loh (SET), Ms. Olivia To (SET), Prof. Guojun He (Co-PI)
1.3	17 August 2022	SBM	Prof. Christine Loh (SET), Ms. Olivia To (SET), Prof. Allen Huang (Co-PI) Researcher - Ms. Juanting Wang, Mr. Srijiith Kannan
2.1	15 August 2022	ENVR	Prof. Christine Loh (SET), Ms. Olivia To (SET), Prof. Jimmy Fung (Co-PI), Eun Soon Im (Co-PI), Xiaoming Shi (Co-I)
2.2 & 2.1	24 August 2022	SBM, ENVR	Prof. Christine Loh (SET), Ms. Olivia To (SET), Prof. George Panayotov (Co-PI), Zhanhui Chen (Co-PI), Jimmy Fung (Co-PI), Xiaoming Shi (Co-I)
3	1 June 2022	ENVR, LIB, CMO	Prof. Alexis Lau (Co-PI), Prof. Jimmy Fung (Co-PI), Ms. Olivia To (SET) and Mr. Tony Chung (Researcher) Others - Prof. Jimmy Chan, Prof. Davis Bookhart, Mr. Edward Spodick, Mr. Tom Chan
	22 August 2022	SBM	Prof. Christine Loh (SET), Prof. Chu Zhang (PC/Co-PI), Prof. Alminas Zaldokas (Co-PI)
	2 September 2022	ENVR	Prof. Christine Loh (SET), Ms. Olivia To (SET), Prof. Alexis Lau (Co-PI)
3 & 4.1	5 October 2022	ENVR, CIVL	Prof. Alexis Lau (Co-PI), Prof. Jack Cheng, Ms. Olivia To (SET) Researcher - Mr. Tony Chung, Ms. Karina Kuan, Ms. Helen Kwok, Ms. Yuxuan Zhang
	10 October 2022	ENVR, SBM	Prof. Christine Loh (SET), Ms. Olivia To (SET), Prof. Alexis Lau (Co-PI), Prof. Jimmy Fung (Co-PI), Prof. Chu Zhang (PC/Co-PI)
	24 October 2022	ENVR	Prof. Christine Loh (SET), Ms. Olivia To (SET), Prof. Alexis Lau (Co-PI)
4.1	2 September 2022	ENVR	Prof. Christine Loh (SET), Ms. Olivia To (SET), Prof. Alexis Lau (Co-PI)
4.1 & 4.2	22 August 2022	SBM, ENVR	Prof. Christine Loh (SET), Ms. Olivia To (SET), Prof. Kai-Lung Hui (Co-PI), Prof. Jimmy Fung (Co-PI)
4.1 & 3	13 September 2022	ENVR, CIVL	Prof. Alexis Lau (Co-PI), Prof. Jack Cheng, Olivia To (SET) Research Team - Ms. Rannie Xu, Ms. Karina Kuan, Ms. Helen Kwok, Ms. Tony Chung
5	30 March 2022	SBM	Prof. Kar Yan Tam (Co-PI), Ms. Olivia To (SET)
	8 August 2022	SBM	Prof. Kar Yan Tam (Co-PI), Prof. Christine Loh (SET)
	22 August 2022	SBM	Prof. Christine Loh (SET), Mr. Lionel Mok (Researcher), Ms. Christy Yeung (PM)
6	27 January 2022	IPP	Ms. Olivia To (SET), Dr. Coco Du (Co-I), Ms. Sherry Li (Researcher)
	15 March 2022	IPP, ENVR	Prof. Ye Qi (Co-PI), Dr. Coco Du (Co-I), Prof. Jimmy Fung (Co-PI), Ms. Olivia To (SET)
	1 August 2022	IPP	Dr. Coco Du (Co-I), Ms. Olivia To (SET)
PM	22 August 2022	SBM, IENV	Prof. Christine Loh (SET), Ms. Olivia To (SET), Ms. Michelle Wong and Ms. Christy Yeung (PM)

III: RECORD OF INTERNAL STAKEHOLDER COMMUNICATION

Task/ Subtask	Meetings	Group	Stakeholders
2, 3, 4, 5 & 6 [CARE2022]	1 November 2022	VP (R&D), Public Affairs Director (HKUST)	Tim Cheng, Daisy Chan (HKUST), Christine Loh (SET)
	21 November 2022	Public Affairs Director (HKUST)	Daisy Chan (HKUST), Christine Loh (SET)
2, 3 & 4.2	13 January 2023	ENVR	Alexis Lau (Co-PI), Michelle Wong (HKUST), Christine Loh (SET)
2	7 February 2023	ENVR	Jimmy Fung (Co-PI), Christine Loh (SET)
4	13 March 2023	ENVR	Dancy Zhang, Michelle Wong (HKUST), CF Lam (SET)
4	17 March 2023	ENVR	Karina Kuan, Michelle Wong (HKUST), CF Lam (SET)
2	24 March 2023	ENVR	Alexis Lau (Co-PI), Jimmy Chan, Christy Yeung (HKUST), Christine Loh, CF Lam (SET)
2 & 3	27 March 2023	ENVR/SBM	Zhang Chu (PC), Christine Loh, CF Lam (SET)
3	19 June 2023	ENVR/Library Office (LO)/ Sustainability Office (SO)	Edward Spodick, Irene Wong, Clara Kwan (LO), Davis Bookhart, Marcus Leung (SO), Tong Chung (ENVR), CF Lam (SET)

IV: RECORD OF EXTERNAL STAKEHOLDER & EXTERNAL PARTIES COMMUNICATION ORGANIZED BY SET

Task/ Subtask	Meetings	Organizations	Stakeholders
2.1, 2.2	23 September 2022	Swire Properties Limited (SPL)	Ms. Elizabeth Kok (SPL), Ms. Fanny Lung (SPL), Mr. Patrick Ho (SPL), Ms. Olivia To (SET), Prof. Zhanhui Chen (Co-PI), Prof. George Panayotov (Co-PI), Prof. Xiaoming Shi (Co-I)
	7 October 2022	Cathay Pacific Airways (CX)	Ms. Della Ng (CX), Ms. Grace Cheung (CX) Prof. Christine Loh (SET), Ms. Olivia To (SET), Prof. Zhanhui Chen (Co-PI), Prof. George Panayotov (Co-PI), Prof. Xiaoming Shi
4.1	29 November 2021	Gammon Construction Limited (Gammon)	Prof. Alexis Lau (Co-PI), Prof. Kai Lung Hui (Co-PI), Prof. Christine Loh (SET), Ms. Olivia To (SET)
	8 December 2021	Gammon Construction Limited (Gammon)	Mr. Eddie Tse (Gammon), Prof. Alexis Lau (Co-PI), Prof. Jimmy Fung (Co-PI), Prof. Kai-Lung Hui (Co-PI), Prof. Chu Zhang (Co-PI/PC), Prof. Christine Loh (SET), Ms. Olivia To (SET)
	7 April 2022	Gammon Construction Limited (Gammon)	Mr. Eddie Tse (Gammon), Prof. Alexis Lau (Co-PI), Prof. Jimmy Fung (Co-PI), Prof. Chu Zhang (Co-PI), Prof. Kar Yan Tam (Co-PI), Prof. Kai Lung Hui (Co-PI), Ms. Olivia To (SET), Ms. Christy Yeung (PM), Prof. Veronique Lafon-Vinais
5	In August 2022, the SET successfully introduced the task team to various parties for consultation	BlueOnion (BO)	Ms. Elsa Pau (BO)
		ADM Capital Foundation (ADM)	Ms. Lisa Genasci (ADM)
		RS Group (RS)	Ms. Katy Yung (RS)
		WYNG Foundation (WYNG)	Ms. Karen Chan (WYNG)
		The Kadoorie Charitable Foundation (Kadoorie)	Mr. Peter Paul de Groote (Kadoorie)
		KHI Holdings Ltd (KHI)	Mr. Nicholas Fu (KHI)
6	18 August 2022	Hong Kong Monetary Authority (HKMA)	Mr. Kenneth Hui (HKMA), Ms. Grace Wong (HKMA), Ms. Ting Wang (HKMA), Prof. Christine Loh (SET), Ms. Olivia To (SET)
	1 September 2022	Securities and Futures Commission (SFC)	Ms. Christine Kung (SFC), Ms. Elaine Ng (SFC), Ms. Grace Wong (SFC), Prof. Christine Loh (SET), Ms. Olivia To (SET)
	11 October 2022	Hong Kong Exchanges and Clearing Limited (HKEX)	Ms. Queenie Tsao (HKEX), Mr. Andy Lau (HKEX), Ms. Connie Lam (HKEX), Ms. Olivia To (SET)
2, 3, 4, 5 & 6 (Many were related to CARE2022 prior to 12 December 2022 plus there were a large number of email and phone exchanges)	13 October 2022	Dunwell Enviro-Tech (Holdings) Ltd.	Daniel Cheng (Dunwell), Christine Loh (SET)
	14 October 2022	The Bank of East Asia	Vincent Wong (BEA), Christine Loh (SET)
	20 October 2022	Hongkong Electric	Bill Ho (HKE), Christine Loh (SET)
	27 October 2022	Olympus Capital	Frederic Long (Olympus), Christine Loh (SET)
	3 November 2022	PAG	Lincoln Pan (PAG), Christine Loh (SET)
	7 November 2022	Urban Land Institute (ULI)	Eli Konvitz (ULI), Christine Loh (SET)
	7 November 2022	Hongkong Electric	Charles Tsai (HEC), Christine Loh, Olivia To (SET)
	8 November 2022	Hong Kong Science and Technology Park (HKSTP)	Gracie Ng (HKSTP), Aldous Mak (HKSTP), Christine Loh (SET)

IV: RECORD OF EXTERNAL STAKEHOLDER & EXTERNAL PARTIES COMMUNICATION ORGANIZED BY SET

Task/ Subtask	Meetings	Organizations	Stakeholders
2, 3, 4, 5 & 6	11 November 2022	Hong Kong Green Finance Association (HKGFA)	Jenny Lee (HKGFA), Christine Loh (SET)
(Many were related to CARE2022 prior to 12 December 2022 plus there were a large number of email and phone exchanges)	23 November 2022	The Bank of East Asia	Vincent Wong (BEA), Christine Loh (SET)
	8 December 2022	The Bank of East Asia	Kelvin Au (BEA), Christine Loh, Olivia To (SET)
	28 December 2022	HKEX	Ken Chiu (HKEX), Christine Loh (SET)
6	15 December 2022	Standard Chartered Bank (SCB)	Tracy Wong Harris (SCB), Christine Loh (SET)
	30 December 2022	British Consulate Hong Kong	Sarah Robinson (BCHK), Christine Loh (SET)
2	2 January 2023	Zurich Insurance	Ericsson Chan (ZI), Christine Loh (SET)
3	2 January 2023	Great Eagle Holdings Ltd., HKGFA	KS Lo (Great Eagle), Ma Jun (HKGFA), Grace Hui (HKUST)
	24 January 2023	ULI	Eli Konvitz (ULI), Christine Loh (SET)
2 & 6	8 February 2023	Hang Seng Index (HSI)	Arnold Hui (HSI), Christine Loh (SET)
3	9 February 2023	ULI	Eli Konvitz, Phil Kim (ULI), Christine Loh (SET)
3	23 February 2023	ULI	Eli Konvitz (ULI), Christine Loh (SET)
2	15 March 2023	Zurich Insurance (ZI)	Eric Hui, Matthew Day, Kannes Wong, Arthur Siu, Alexandra Wrobel, Dave Kong (ZI), Alexis Lau (Co-PI), Chen Zhanhui (Co-PI), George Panayotov (Co-PI), Christine Loh, CF Lam (SET)
3	18 March 2023	Housing Bureau (HB), Shui On, Great Eagle, HKGFA	Winnie Ho (HB), Stephanie Lo (Shui On), KS Lo (Great Eagle), Ma Jun (HKGFA), Grace Hui (HKUST), Christine Loh (SET)
5	22 March 2023	Institute of Bankers (IOB)	Kathy Chan and Philip Kam (IOB), Christine Loh (SET)
2	22 March 2023	Insurance Authority (IA)	Clement Cheung (IA), Christine Loh (SET)
3	24 March 2023	CLP	Pubudu Abayasiri (CLP), Christine Loh (SET)
External Collaboration	27 March 2023	Securities & Futures Commission (SFC)	Julia Leung, Kelvin Fung, Winnie Tam, Ben Chui, Leo Choi (SFC), Renita Au, Warwick Yuen (HKMA), Alexis Lau (Co-PI), Tam Kar Yan, Jimmy Chan, Christy Yeung, Shannon Ho (HKUST), Christine Loh, CF Lam (SET)
3	11 April 2023	Jao Tsung-I Academy (JTIA)	Kiki Ko, Ben Leung (JTIA), Alexis Lau (Co-PI), Michelle Wong, LuLu Li, Tony Chung (HKUST), CF Lam (SET)
2 & 5	14 April 2023	BEA	Zoe Lau, Doris Tong, David Kim, Stephen Leung (BEA), Kar Yan Tam (Co-PI), Christine Loh (SET)
2	14 April 2023	Insurance Authority (IA)	Vicki Wong and Frankie Chan (HKIA), Christine Loh (SET)
6	17 April 2023	SCB	Tracy Wong Harris (SCB), Christine Loh (SET)

IV: RECORD OF EXTERNAL STAKEHOLDER & EXTERNAL PARTIES COMMUNICATION ORGANIZED BY SET

Task/ Subtask	Meetings	Organizations	Stakeholders
3	18 April 2023	Climate Change Office of Environment & Ecology Bureau (EEB)	CF Wong, Dorothy Ma (EEB), Christine Loh, CF Lam (SET)
	24 April 2023	Housing Bureau (HB), HK Housing Society (HS)	Winnie Ho (HB), KK Ling (HS), Grace Hui (HKUST), Christine Loh (SET)
4	26 April 2023	China State Construction Engineering Co. (CSCEC)	Deng Jian (CSCEC), Jack Cheng, Karina Kuan (HKUST), CF Lam (SET)
6	26 April 2023	Ex-HKEX Official	James Fok (ex-HKEX), Coco Du (Co-I), Christine Loh (SET)
3	28 April 2023	Urban Renewal Authority (URA), HS	CS Wai (URA), KK Ling (HS), Christine Loh, CF Lam (SET)
2	28 April 2023	IA	Clement Cheung, Simon Lam, Adrian Lam, Frankie Chan, Prudence Ho (IA), Alexis Lau (Co-PI), Christy Yeung, Michelle Wong (HKUST), Christine Loh, CF Lam (SET)
3	9 May 2023	Asia Carbon Institute (ACI)	John Lo, Raymond Fong (ACI), Grace Hui (HKUST), Christine Loh, CF Lam (SET)
	17 May 2023	CLP	Jim Taylor (CLP), Christine Loh, CF Lam (SET)
	17 May 2023	JP Morgan (JPM)	Matthew Chan, Henri DeBranche, Alan Chan, Arsalan Mahtafar, Karl Yeh, Kyle Qi, James Chen (JPM), Zhang Chu (PC), Christine Loh, CF Lam (SET)
6	19 May 2023	British Consulate Hong Kong	Jenny Ho (BCHK), Coco Du (Co-I)
2	29 May 2023	JPM	Alan Chan (JPM), Zhang Chu (PC), George Panayotov (Co-PI), CF Lam (SET)
3	29 May 2023	Hong Kong and China Gas Co. Ltd. (Towngas)	Issac Yeung, Ivan Lee, Bien Wong (Towngas), Raymond Fong (ACI), CF Lam (SET)
2 & 6	29 May 2023	Academy of Finance (AoF)	KC Kwok (AoF), Christine Loh (SET)
(All were related to GFANZ seminar prior to 28 June 2023 plus there were a large number of email and phone exchanges)	31 May 2023	AoF	KC Kwok (AoF), Christine Loh (SET)
	1 June 2023	HKGFA	Jenny Lee (HKGFA), Christine Loh (SET)
	2 June 2023	U.S. Consulate Hong Kong (USCHK)	Lombardo Sarah P (BCHK), Genevieve Siebengartner (USCHK), Christine Loh (SET)
	12 June 2023	Glasgow Financial Alliance for Net Zero (GFANZ)	Ben Weisman (GFANZ), Christine Loh (SET)
External Collaboration	6 June 2023	HKMA, SFC	Wang Ting, Max Kwong (HKMA), Kelvin Fung, Winnie Tam (SFC), Jimmy Chan, Shannon Ho, Christy Yeung (HKUST), CF Lam (SET)
3	13 June 2023	Jao Tsung-I Academy (JTIA)	Kiki Ko, Ben Leung, Henry Lai, Leighton Ho (JTIA), Michelle Wong, Tony Chung, LuLu Li (HKUST), CF Lam (SET)

IV: RECORD OF INTERNAL STAKEHOLDER COMMUNICATION

Task/ Subtask	Meetings	Organizations	Stakeholders
3	27 June 2023	UBS	Tasos Zavitsanakis (UBS), Christine Loh (SET)
4	29 June 2023	Yau Lee Construction Co. Ltd. (YL)	Koeman Chan, Benny Liu (YL), Karina Kuan, Rannie Xu (HKUST), CF Lam (SET)
4	30 June 2023	Jao Tsung-I Academy (JTIA)	Kiki Ko, Ben Leung, Henry Lai (JTIA), Danny Ip, Wilson Ip (Kins Eng. Ltd.) Michelle Wong, Tony Chung, LuLu Li (HKUST), CF Lam (SET)
4	30 June 2023	MTR Corporation Ltd. (MTR)	Jesssica Chan, YS Cheng (MTR), Jack Cheng, Karina Kuan, Rannie Xu (HKUST), CF Lam (SET)

V: RECORD OF RELEVANT EVENTS

Date	Event	Organizer	Format
26.02.2022	Sustainable and Green Finance Webinar by HKEJ and EDB		Webinar
16.03.2022	HEC-HKUST Sustainable Finance Seminar: [Seminar 1] Equilibrium Emission Caps and Investment in Green Technologies		Webinar
17.03.2022	QFIN and SGFN Speaker Series 2021-2022: Promoting Sustainable Finance – Sharing by a Global Leading Green Bank		Webinar
29.03.2022	EVMT + SGFN Green Finance Speaker Series 2021-22: Asia's race to net-zero: 12.4 trillion dollars and counting		Webinar
13.04.2022	HEC-HKUST Sustainable Finance Seminar: [Seminar 2] The Pollution Premium		Webinar
19.04.2022	EVMT + SGFN Green Finance Speaker Series 2021-22 - Green monetary policies and Green financial policies		Webinar
08.05.2022	EVMT + SGFN Green Finance Speaker Series 2021-22 - Scaling Up Sustainable Investment through Blockchain-Based Project Bonds		Webinar
10.05.2022	TCFD based reporting of capacity to transition to net-zero carbon emissions		Webinar
11.05.2022	HEC-HKUST Sustainable Finance Seminar: [Seminar 3] Socially Responsible Finance: How to Maximize Impact?		Webinar
18.05.2022	HKUST and Pictet Asset Management Survey on ESG Investing		Press Conference
15.06.2022	HEC-HKUST Sustainable Finance Seminar: [Seminar 4] Smokestacks and the Swamp		Webinar
03.10.2022	QFIN x SGFN Speaker Series 2022-23: [3rd Session] Active Ownership: Dialogue Between Investors and Companies		Webinar
19.10.2022	HKUST Green Finance in Practice Seminar Series: A Deep Dive: Morningstar & Sustainalytics' ESG Risk Rating		Webinar
26.10.2022	HEC-HKUST Sustainable Finance Seminar: [Seminar 5] Climate Laws and Cross-Border Mergers and Acquisitions		Webinar
17.11.2022	Decarbonization Along the Value Chain	Hong Kong Exchanges and Clearing Limited	Webinar
05.12.2022	Asian Insurance Forum 2022, Panel on ESG	Hong Kong Insurance Authority	Conference
10-12.12.2022	CARE2022 Hong Kong Conference	ENVR/IENV, HKUST	Conference

Reference:

1. <https://www.envr.ust.hk/events-and-media/events-and-seminars.html>2. <https://ienv.hkust.edu.hk/events>3. <https://bm.hkust.edu.hk/zh-cn/the-school/introduction/green-finance-research-project/latest-updates>

V: RECORD OF RELEVANT EVENTS

Date	Event	Organizer	Format
14.03.2023	Opportunities and Headwinds for Hong Kong's Voluntary Carbon Market	Bloomberg Professional Services	Seminar
16.03.2023	Roundtable on Climate Finance	British Consulate	Roundtable
17.03.2023	Scaling Up Sustainable Finance in Asia: Panel on Capital Financing and Biodiversity	Asia Securities Industry & Financial Markets Association	Conference
24-25.06.2023	Northern Metropolis Forum & Workshop – Future City Vision	Hong Kong Institute of Architect, Northern Metropolis Task Force and Healthy City Initiative	Forum & Workshop
28.06.2023	Accelerating the Transition to a Net-Zero Global Economy: Regulatory Climate Disclosure and Risk Analysis	HKUST, Academy of Finance, Hong Kong Green Finance Association	Seminar

