



# DEVELOPING HONG KONG AS A GLOBAL GREEN FINANCE CENTRE

Theme-Based Research

Project No. T31-603/21-N

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## ABBREVIATIONS

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AoF	Academy of Finance	HKQAA	Hong Kong Quality Assurance Agency
AXA	AXA Hong Kong	HKSTP	Hong Kong Science and Technology Park
BEA	Bank of East Asia	HS	Housing Society
BD	Buildings Department	HSBC	Hong Kong and Shanghai Bank
BIS	Bank of International Settlement Innovation Hub	HKUST	Hong Kong University of Science and Technology
BOC	Bank of China	IA	Insurance Authority
BSAP	Biodiversity Strategy Action Plan	IENV	Institute for the Environment/HKUST
CARE	Centre for Climate Adaptation and Resilience/HKUST	IFC	International Finance Centre
CARE2024	Climate Change event on heat	IFFO	Infrastructure Financing Facilitation Office/ HKMA
Chinachem	Chinachem Group	IPCC	Intergovernmental Panel on Climate Change
CIC	Construction Industry Council	JTIA	Jao Tsung-I Academy
CLP	CLP Power HK Ltd.	LINK	Link Real Estate Investment Trust
CMO	Campus Management Office/HKUST	M&A	Merger and Acquisition
COP	United Nation Conference of Party	MSS	Meteorological Service Singapore
CX	Cathay Pacific Airways	MTR	MTR Corporation Limited
EEB	Environment and Ecology Bureau	NGO	Non-governmental organization(s)
EMSD	Electrical and Mechanical Services Department	NTU	Nanyang Technology University
ENVR	Division of Environment and Sustainability/ HKUST	NUS	National University of Singapore
EPD	Environmental Protection Department	Peak Re	Peak Re Reinsurance Co.
EUI	Energy Utilization Index	PICO	Policy Innovation and Co-ordination Office
FSDC	Financial Services Development Council	Red Cross	Red Cross HK
FSTB	Financial Services and the Treasury Bureau	RGC	Research Grants Council
GAIP	Global Asia Insurance Partnership	SBM	School of Business and Management/HKUST
Gammon	Gammon Construction Limited	SC	Standard Chartered Bank
GBA	Greater Bay Area	Schneider	Schneider Electric (Hong Kong) Ltd.
GFANZ	Glasgow Financial Alliance for Net ZERO	SEP	Stakeholder Engagement Plan
Great Eagle	Great Eagle Holdings Ltd.	SET	Stakeholder Engagement Team
HAD	Home Affairs Department	SFC	Securities and Futures Commission
HB	Housing Bureau	SHK	Sun Hung Kai Properties
HD	Housing Department	Shui On	Shui On Management Ltd.
HKEX	Hong Kong Exchanges and Clearing Limited	SINO	Sino Group
HKFI	Hong Kong Federation of Insurers	SME	Small-to-Medium Enterprises
HKGBC	Hong Kong Green Building Council	SO	Sustainability Office/HKUST
HKGFA	Hong Kong Green Finance Association	SPL	Swire Properties Limited
HKIQEP	Hong Kong Institute of Qualified Environmental Professionals	Towngas	Hong Kong and China Gas Co. Ltd.
HKMA	Hong Kong Monetary Authority	URA	Urban Renewal Authority
HKO	Hong Kong Observatory	WHO	World Health Organization
		WMO	World Meteorological Organization

# EXECUTIVE SUMMARY

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This Stakeholder Engagement Report by the Stakeholder Engagement Team (SET) under Task 6 covers the period from July 2023-June 2024 (SER3). This report follows on from the first report covering January-October 2022 (SER1) and the second report covering November 2022-June 2023. The appendices of SER3 on the extensive engagements activities follows the format in SER1 and SER2.

Green Finance continued to be a highly popular topic of policy and business discussions in Hong Kong in 2023 and into 2024 resulting in many public events to which SET participated in as part of the Theme-based Research Project (TBRP) on *Developing Hong Kong as a Global Green Finance Centre*. A list of these events is provided in Appendix V.

Overall, the Task Teams 1 to 6 have continued to press ahead. The Stakeholder Engagement activities (Task 6b) and hence SER3, focuses largely on Tasks 2, 3, 4 and a special assignment related to Task 6b. Task 5 and Task 6a have also continued their paths, but the research teams have not needed much support from SET.

## I: ENGAGEMENT WITH THE FINANCIAL SERVICES COMPANIES AND REGULATORS

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A major aspect of SET's work in 2023-24 has been developing closer relationships with the financial services companies and their regulators in Hong Kong. The results to date have included the following activities and achievements:

- **Task 2.1:** Task 2.1 relates to climate science and SET has been highly active in stakeholder engagement. SER2 has already recorded the early phase of building connections with the insurance sector. Relations with the Insurance Authority (IA) have matured to the stage that IA and HKUST are cooperating to build capability and capacity in climate science starting with developing parametric insurance products for Hong Kong and possibly the Greater Bay Area markets. As part of this evolving relationship with IA, and in consideration of HKUST expanding its work in Southeast Asia with a focus on tropical and

sub-tropical regions, the Task 2.1 team had travelled to Geneva in November 2023 to meet relevant multilateral organizations; Task 2.1 and SET teams visited Singapore in April 2024 to meet relevant parties to understand the application of climate science in Southeast Asia; and members of the Task 2.1 team visited Kuala Lumpur and Bangkok in June 2024 to conduct similar meetings.

- **Task 6a:** Task 6a relates to policy research. Its achievements during this current reporting period includes:
  - i. SET discussed with HKMA to give specific highlight of TBRP's work on taxonomy to showcase local scholarship: TBRP'S outputs on taxonomy were sent directly to HKMA in September 2023, and the Task 6a member on taxonomy was invited to speak at the HKMA event on 29 March 2024.
  - ii. The Task 6a Team was invited to present to the Chief Executive's Policy Unit at the Policy Research Seminar 2024 on *Developing a Green Finance Centre in Hong Kong in the Context of Green Development of the Guangdong-Hong Kong-Macao Greater Bay Area: Institutional Analysis and Policy Design* that focused on strategies for advancing green finance specifically in Hong Kong within the Greater Bay Area.
- **Task 6b:**
  - i. SET attended many public events addressing issues related to Tasks 2.1 and 3, as climate science, and decarbonizing buildings through retrofits, are of great interest to the financial and business sectors.
  - ii. SER2 noted that HKUST was asked to develop a GHG Assessment Tool and Calculator for SMEs by the HKSAR Government's *Green and Sustainable Cross-Agency on Steering Group* (CASG). While that assignment is not a part of the TBRP, it brought the Task 6b team to work closely with the financial regulators, as the GHG Assessment Tool + Calculator, launched in February 2024, became a part of the effort to strengthen Hong Kong role as a global green finance centre.

## II: ENGAGEMENT WITH GOVERNMENT & BUSINESS ON DECARBONIZING BUILDINGS

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SET spent considerable time since SER2 on Task 3, which 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. SET's engagement focuses on developing cooperation opportunities with the government, property owners and built environment professionals to access data, information, and expertise about retrofitting buildings.

As discussed in SER1 and SER2, obtaining energy usage data of buildings remain a challenge as the HKSAR Government does not have detailed data and the two electricity companies in Hong Kong only release minimal data. As detailed data is unlikely to be available, the Task 3 and SET teams have taken an innovative route to estimate data using a specially designed digital tool (see below). To date, the following has been accomplished:

- (i) Data that could be obtained from the HKSAR Government and other sources have been gathered and compiled.
- (ii) Agreements have been reached with retrofit service providers and a small number of property owners to use their data.
- (iii) The Task 3 and SET teams have created a digital 3D Visualization Tool that shows buildings in Hong Kong and their estimated energy saving potentials. The estimations are on current energy usage of different building types and age, and their potentials to save energy based on types of retrofits (equipment/costs). The formulae for estimations are derived from data obtained in (i) and (ii) + data that have been scraped from open and other sources the team could access. The purpose of the tool is to use it to stimulate discussion among stakeholder groups – including government officials, property owners, built environment professionals, bankers, and investors. SET is calling for assistance from them to verify the reasonableness of the estimation formulae and to provide more data to fill in data gaps.

- (iv) A meeting of the identified groups of stakeholders was called on 22 May 2024, which generated considerable interest in the 3D Visualization Tool. Existing partnerships were reconfirmed, and new partnerships were formed to further develop the tool.
- (v) SET was invited to be a member of the Hong Kong Green Finance Association (HKGFA) working group on building retrofits. The working group aims to produce a report on financing retrofits in late 2024, which will be helpful to Task 3.
- (vi) SET has introduced several property owners to the Task 3 team for it to measure the before-and-after outcomes of retrofits to verify the benefits with respect to different types of existing buildings, ranging from commercial, hospitality, educational to heritage buildings.

## III: ENGAGEMENT WITH INFRASTRUCTURE CONTRACTORS FOR BLOCKCHAIN USAGE

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Task 4.1 aims to create a prototype blockchain-based carbon tracking system for the major building materials used in the construction industry. SET has continued to have regular meetings with the research team to follow its progress, as the research team works closely with the main stakeholder partner (Gammon).

Additionally, SET coordinated a series of stakeholder interviews conducted between October 2023 and June 2024. The purpose of the interviews was to gain a better understanding of the current practices and challenges associated with tracking and managing embodied carbon data in the construction supply chain, and to gather insights on stakeholders' perspectives regarding Task 4's proposed carbon management system. The SET team has facilitated connections with the stakeholders and/or supported discussions during the interviews.

## IV: OBSERVATIONS

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SET has the following general observations having worked on engagement from the start of the TBRP to this point (approximately halfway):

**1. Climate science and sustainability knowledge is foundational to green finance**

Climate science is essential for modeling and predicting future climatic change, which in turn informs critical decision-making, policy development, and societal adaptation to the impacts of climate change, including extreme weather events. Scientific expertise is crucial for the financial services industry, enabling the assessment and management of climate-related risks, compliance with evolving regulations, optimization of investment and lending portfolios, development of innovative products, and ensuring the long-term resilience of operations.

**2. Co-learning across government, business, and insurance sectors is essential**

Fostering knowledge-sharing and stronger collaboration between climate scientists, financial services providers, regulators, and infrastructure asset developers is crucial to enable informed and climate-aware decision-making. Taking an integrated approach will contribute to the overall resilience of the financial system and the broader economy, including serving the financial needs of the Asia-Pacific region, and for Hong Kong to be an innovative global green finance centre.

Continuing collaboration and knowledge-sharing among climate experts, financial practitioners, and policymakers will be essential to ensure that Hong Kong's financial system is aligned with the transition to a sustainable, low-carbon future. Leveraging this cross-disciplinary expertise will be a key competitive advantage for Hong Kong as it strives to maintain its status as an innovative, leading global green financial center.

**3. Cross-and-inter-disciplinary & Cross-sector Cooperation is key**

Addressing the complex challenges posed by climate change requires a truly cross-disciplinary and interdisciplinary approach. Professionals from diverse fields, including climate science, infrastructure, technology, banking, insurance, investing, and public policy, must come together to develop a comprehensive understanding of climate-related risks and opportunities.

**4. Improving ESG reporting and disclosure**

Having a deeper understanding of climate-related risks and opportunities is essential for ESG (Environmental, Social, and Governance) reporting and disclosures. Professionals must work collaboratively to establish robust and standardized ESG disclosure frameworks, enabling transparent reporting of climate-related impacts. They must also deepen their understanding of physical and transition risks and translating complex climate data into actionable insights.

**5. Understanding roles of universities vs commercial consultants**

The continued public and private sectors support for university research is crucial due to its distinct focus, approach, and intended applications. Commercial consultants serve a specific client and can rapidly produce work tailored to the commercial needs of clients. In contrast, university researchers prioritize data collection and analysis to advance the fundamental understanding of climate and other science-based and technology-based systems.

This report covers the period from July 2023 – June 2024. SER3's appendices follow the format used in SER1 and SER2.

## International, national, and local impetus to green finance

Since the publication of SER2 in June 2023, there have been significant international and national focus on green finance that gave further impetus to activities in Hong Kong.

COP28 in Dubai, United Arab Emirates (30 November – 13 December 2023), marked the conclusion of the first 'global stock take' of the world's efforts to address climate change under the Paris Agreement. The message from COP28 was that the world's efforts to address climate change has not been rapid enough. COP28 highlighted the financial and technological support needed to decarbonize and adapt to a changing climate. Governments urged accelerated action across all areas by 2030, including speeding up the transition away from fossil fuels to clean energies.

China is an active participant at COP and in international dialogue on climate change and sustainable development. China is pivoting to clean energy with huge investment in clean energy manufacturing. Having established itself as the world's main supplier of solar panels, wind turbines, batteries, electric vehicles, and other green technologies, China's decarbonization agenda and its economic growth plans are well aligned. At the "two sessions" political gathering in March 2024, the government highlighted among its plans the development of methods to measure carbon emissions and a 'carbon footprint management system' including the expansion of the national carbon trading system.

China's 14<sup>th</sup> Five Year Plan (2021-25) has Hong Kong serving as an international financial centre (IFC). In 2022, the HKSAR Government articulated its plan for Hong Kong to be "a premier financing platform for governments and green enterprises in the Mainland and around the world", as well as to develop Hong Kong "into an international carbon market".<sup>1</sup> The HKSAR Government Budget 2023 called for an International GreenTech Week to be organized,<sup>2</sup> which was achieved in February 2024, where HKUST played a role using the TBRP as the platform to discuss specific topics of research and their policy implications. The HKSAR Budget 2024 highlighted hydrogen, green marine fuel and sustainable aviation fuel, green public transport as policies the HKSAR Government will pursue, including assisting companies and financial institutions in sustainability reporting and data analysis (which could include aspects of TBRP).<sup>3</sup>

## Summary of Tasks 1-6

While SET is designed to serve all the Tasks, engagement has been more active in some and less in others:

- **Task 1:** There are 4 separate research teams under Task 1. The research teams did not need the assistance of SET during this reporting period.
- **Task 2:** SET is active with Task 2.1 and spending considerable time with the Task 2.1 research team, IA and insurance companies to develop a cooperation model between HKUST and IA to assist the insurance sector to expand its science-based capacity and capability that could help to develop insurance products to respond to extreme weather events. This task requires considerable time and attention.

1. Hong Kong Policy Address 2022, paragraph 37 (iv).  
 2. Hong Kong Budget 2023, paragraphs 58-63.  
 3. Hong Kong Budget 2024, paragraphs 75-87.

- **Task 3:** SET is active with Task 3, as retrofitting existing buildings and how to finance them at scale requires collaboration from many stakeholders ranging from government authorities to building owners, professionals, equipment providers, bankers, and investors. This task on its own has become an almost full-time endeavour.
- **Task 4:** SET is active in Task 4.1, as the creation of a new prototype blockchain-based carbon tracking system for major building materials used in the construction industry requires close monitoring of the relationship between the research team and the partner (Gammon). The project is proceeding well. As for Task 4.2, the research team is still at the data gathering and compilation stage, and engagement work is expected in late 2024 or 2025 when sufficient data and insights are available to share with stakeholders.
- **Task 5:** The Task 5 team has been active in reaching out to the local green finance community and collaborating with industry partners. The Emerging Jobs and Skills Portal that presents useful talent insights in the emerging sectors, such as ESG to employers and jobseekers, has been launched. The Task 5 team has also started working with one of the largest job boards in Hong Kong (Jobsdb) to expand the portal's services for jobseekers and to organize activities to attract talent to the green and sustainable finance sector. Although Task 5 did not require assistance from SET during the reporting period, the research team has been in frequent communication with SET to explore ways to create synergy through the project's various activities.
- **Task 6:** SET keeps in regular touch with the Task 6a research team. While SET has only had light involvement to assist Task 6a team on engagement, SET had participated in many Task 6b public events, especially relating to Task 2.1 and Task 3. Moreover, the special assignment related to the creation and promotion of the GHG Assessment Tool and Calculator for SMEs for the HKSAR Government's *Green and Sustainable Cross-Agency on Steering Group* (CASG) has become a part of the work of Task 6b from the perspective of strengthening Hong Kong as an innovative global green finance centre.

## 2 SPECIFIC ENGAGEMENT – TASK 2

### CLIMATE RISK MODELING FOR POLICYMAKING AND BUSINESS

#### Growing interest in climate science and predictions

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, business organizations, professionals, and non-government organizations (NGOs). The stakeholder engagement plan for Task 2.1 necessarily requires outreach to the following groups:

**Group 1:** The HKSAR Government's Bureaux/Departments (B/Ds) where climate science is important to their policymaking. A key stakeholder within the government is Hong Kong Observatory (HKO), the government's climate science authority. Other departments include those planning, designing, and constructing infrastructure considering climate adaptation, and those handling public health and labor policies considering extreme heat.

**Group 2:** Industry players in infrastructure and property, as they wish to learn more about extreme weather risks and the impact on their assets. This group includes property companies.

**Group 3:** Financial services stakeholders include (a) banks that lend to infrastructure and property owners, (b) investors investing in those companies, and (c) insurers,

**Group 4:** NGOs, as there are many potential groups vulnerable to extreme weather risks.

#### Events explaining extreme weather

The extreme weather events of September and October 2023 generated many opportunities for the Task 2.1 and SET teams to explain climate science to stakeholders and the public. SET created events under the banner of the TBWP, as well as attended events organized by others.

### EXTREME WEATHER IN SEPTEMBER 2023 – STORMS, RAINS & HEAT

September 2023 was an eventful month in Hong Kong with the ferocious strike by Super Typhoon Saola on 1 – 2 September and the phenomenal rainstorm on 7 – 8 September. With a maximum sustained wind of 230 km/h near its centre, Saola was the second most intense tropical cyclone affecting the South China Sea since 1950 and Hurricane Signal No. 10 was issued in Hong Kong during the passage of Saola, the first time since Super Typhoon Mangkhut hit Hong Kong in September 2018. A trough of low pressure associated with the remnant of tropical cyclone Haikui brought prolonged torrential rain to Hong Kong

on 7 – 8 September and necessitated the issuance of the Black Rainstorm Warning for 16 hours and 35 minutes, setting the longest record since the introduction of the rainstorm warning system in 1992. Mainly attributing to the heavy rain associated with Saola and troughs of low pressure in the first half of the month, the Observatory recorded an all-time high September rainfall of 1067.1 millimetres, more than three times of the September normal of 321.4 millimetres and easily breaking the previous record of 844.2 millimetres set way back in September 1952. Moreover, the rainfall deficit in the first eight months of this year was mostly

compensated by the record-breaking rainfall in September. The accumulated rainfall this year up to September was 2224.3 millimetres, slightly less than the normal figure of 2242.8 millimetres for the same period. Despite the stormy weather in the first part of the month, there was a long spell of sunny and very hot weather with 10 consecutive very hot days from 21 to 30 September in the later part of the month. It also set the longest record of consecutive very hot days for September. Overall, the month remained hotter than usual with a mean temperature of 28.5 degrees, 0.6 degrees above the normal of 27.9 degrees.

Hong Kong Observatory<sup>4</sup>

4. Hong Kong Observatory, The Weather of September 2023, <https://www.hko.gov.hk/en/wxinfo/pastwx/mws2023/mws202309.htm>; and The Weather of October 2023, <https://www.hko.gov.hk/en/wxinfo/pastwx/mws2023/mws202310.htm>.

## EXTREME WEATHER IN OCTOBER 2023 – MORE STORMS, RAINS & HEAT

Under the influence of the outer subsiding air of [Typhoon] Koinu, it was generally fine and very hot during the day in Hong Kong on 4 – 5 October. The maximum temperature at the Observatory soared to 34.6 degrees on the afternoon of 4 October, the highest of the month and the highest monthly absolute maximum temperature on record for October. Moreover, the daily mean temperature on that day reached 30.8 degrees, the highest on record for October. With Koinu edging closer to the coast of Guangdong, while there were sunny periods during the day, winds over Hong Kong picked up gradually and there were a few showers on the night of 6 October. Local wind strength increased further on 7 October with strong winds

offshore and occasional gales on high ground. The weather also turned cloudy with a few squally showers on that day.

With Koinu moving towards the vicinity of the Pearl River Estuary, the weather of Hong Kong deteriorated significantly on 8 October and the Gale or Storm Signal No. 8 was issued on that afternoon. Local winds strengthened significantly and reached storm force offshore and on high ground that night. The Increasing Gale or Storm Signal No. 9 was also issued that night when the compact and hurricane force wind bearing eyewall of Koinu skirted past closely to the south of Hong Kong. With Koinu weakening and departing from Hong Kong, local winds moderated later on 9 October. Koinu

brought squally heavy showers to Hong Kong on 8 – 9 October and necessitated the issuance of the Black Rainstorm Warning on the morning of 9 October. The rainfall recorded at the Observatory on 9 October reached 369.7 millimetres, more than three times of October's monthly total normal figure of 120.3 millimetres and the highest daily rainfall on record for October. Moreover, the 24-hour rainfall from 3 p.m. on 8 October to 3 p.m. next day reached 439.8 millimetres, breaking the highest record for October. Overall, more than 300 millimetres of rainfall were recorded over most parts of the territory and rainfall even exceeded 600 millimetres in Central and Western, Wan Chai, Wong Tai Sin and Kwun Tong Districts on 8 – 9 October.

Hong Kong Observatory<sup>5</sup>

SET organized two sets of events in 2023 and 2024 during the SER3 reporting period that focused on (a) extreme rains and floods, as well as (b) extreme heat. With respect to extreme heat, SET has continued the CARE branding used in 2022 for the Climate Adaptation and Resilience Conference organized under TBRP. The intention is to continue to develop the CARE brand going forward for climate adaptation and resilience events.

Considering the September-October 2023 extreme weather events, SET used them as the backdrop to discuss climate change and affordable housing in a forum organized by the NGO Habitat for Hong Kong.

The Task 2.1 and SET teams attended a press conference organized by the Chinese University of Hong Kong (CUHK) on 27 November 2023 in association with HKUST and the University of Hong Kong (HKU), with HKUST providing climate modelling data that showed the number of 'hot nights' was predicted to increase by 50% in the 2040s, and extreme rainfall by over 40%.

The HKUST event organized by SET entitled *Navigating Unpredictable Rains and Floods: Useful Stress Tests for Hong Kong* on 21 November 2023 was timely. The event was designed for the financial sector to raise questions about the September-October 2023 extreme climate events with government departments in attendance, as one of the key messages from finance professionals was their interest to know more about the HKSAR Government's plans for adaptation/flood prevention.

5. Hong Kong Observatory, The Weather of September 2023, <https://www.hko.gov.hk/en/wxinfo/pastwx/mws2023/mws202309.htm>; and The Weather of October 2023, <https://www.hko.gov.hk/en/wxinfo/pastwx/mws2023/mws202310.htm>.

## EVENTS ORGANIZED BY SET/HKUST

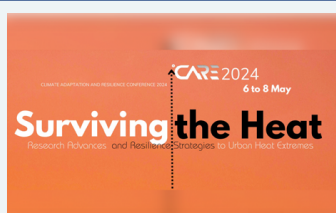
2023

**21 November** Navigating Unpredictable Rains and Floods - Useful Stress Tests for Hong Kong: Task 2.1 and SET teams explained the extreme weather events of September-October 2023, in discussion with property owners, insurers, and bankers.



2024

**6-8 May** CARE2024 - Surviving the Heat: The event consisted of two-days of scholarly discussion about extreme heat, with 8 May 2024 being a public event that summarized the learning from the scholars and providing perspectives to the authorities in developing policies.



## EVENTS ORGANIZED BY OTHER ORGANIZATIONS

2023

**4 October** Housing Forum by Habitat for Hong Kong: SET explained climate science and the impact on affordable housing.



**27 November** Press Conference by CUHK in association with HKUST and HKU: Task 2.1 and SET teams explained climate science and results of risk modelling, including extreme rainfall, and extreme heat.

**Selected media coverage:**

CUHK Press Release (Nov 27 2023): CUHK-led collaborative research predicts hot nights to increase by 50% in 2040s and extreme rainfall to increase by over 40%

The Standard (Nov 28 2023): More extreme rainfall on long-term radar

Ming Pao (Nov 28 2023): Chinese Article

Sing Tao (Nov 28 2023): Chinese Article



Professor Jimmy Fung and Professor Christine Loh, HKUST; Professor Edward Ng, CUHK, and Professor Chao Ren, HKU



### Developing relationship with insurance sector

In pursuance of Task 2.1, SET's objective has been to develop a close relationship with IA to explore how Task 2.1 could be useful to the insurance sector, as well as to raise the profile of HKUST's climate modelling capability among insurers. A mutually beneficial relationship has been established as could be shown by the activities shown below, which enables the growing capabilities and capacities of HKUST to be shared with the insurance sector.



Meeting at HKUST with Insurance Authority and members of the Hong Kong Federation of Insurance on potential collaborations on 20 February 2024



HKUST at the launching ceremony of the Climate Charter of the Insurance Sector hosted by Federation of Insurers, and speaking on the panel discussion, on 29 February 2024



HKUST meeting with Clement Cheung, CEO of Insurance Authority, and IA senior executives on 13 May 2024

#### ACTIVITIES WITH IA/INSURANCE SECTOR

2023

**8 December** SET was invited to help design and moderate a part of IA's annual summit.

2024

**20 February** IA invited the Hong Kong Federation of Insurers (HKFI) and a group of insurance companies to visit HKUST to meet Task 2.1 and SET teams to understand HKUST's climate science capabilities.

**29 February** HKFI invited HKUST to attend and speak at its launch of Insurance Industry Climate Charter, which was signed by 88% of the industry.

**4 March** IA invited Task 2.1 and SET teams to meet visitors from the World Bank to exchange ideas on climate science and strengthening the capacities of climate science in Southeast Asia.

**13 May** Meeting between IA and Task 2.1 and SET teams to discuss further cooperation on developing parametric products for Hong Kong and possibly the Greater Bay Area. IA and Task 2.1 and Task 6(b) teams agreed to meet every two months from July 2024 to update progress.

## ACTIVITIES TO STRENGTHEN HKUST'S CAPABILITIES

2023

**November** Geneva Visit: The Task 2.1 team organized a trip to Geneva in November 2023 to meet multilateral bodies that would be important not only for Task 2.1 but also for the evolving relationship with IA and other government B/Ds to deepen cooperation.

2024

**April** Singapore Visit: The Task 2.1 and SET teams organized a trip to Singapore in April 2024 to meet Singapore institutions to better understand their climate science authority, as well as their understanding of the importance of extreme heat.

**June** Malaysia Visit: The Task 2.1 team visited Kuala Lumpur to visit Malaysian institutions to better understand their climate science work and to create opportunities for cooperation.

**June** Thailand Visit: The Task 2.1 team visited Bangkok to visit Malaysian institutions to better understand their climate science work and to create opportunities for cooperation.



Meeting with Thailand Meteorological Department on 14 June 2024



Discussion panel on "Effective extreme climate warning systems to safeguard communities" in Global Sustainable Development Congress on 11 June 2024

## GENEVA VISIT – WMO, WHO, IPCC, AND IFRC, 14-16 NOVEMBER 2023

The Task 2.1 team visited Geneva and met World Meteorological Organization (WMO), World Health Organization (WHO), Intergovernmental Panel on Climate Change (IPCC) and International Federation of Red Cross (IFRC) to showcase HKUST's climate modelling and other capabilities and to explore cooperation at the international level. The visit led to the following achievements:

1. HKUST became a WMO-recognized "My Climate Risk" Regional Hub (hub members are all institutions with significant climate capabilities).
2. WMO and HKUST are preparing to sign a Memorandum of Understanding (MOU) in pursuing various collaborative opportunities, including on relevant research, applications, policy development and training and capacity building.
3. WMO, WHO and IFRC wish to collaborate with HKUST to tracking weather events and providing information and warnings on an individualized basis using an application that HKUST have already developed/launched in Hong Kong (known as PRAISE).



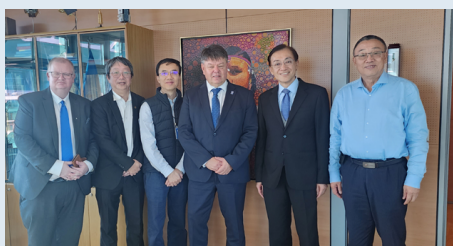
Meeting with International Federation of Red Cross (IFRC)



HKUST's Visit to Intergovernmental Panel on Climate Change (IPCC)



Meetings with World Meteorological Organization (WMO)



HKUST's Visit to WHO in Geneva

## POST-GENEVA VISIT – WMO AND HONG KONG RED CROSS

Since returning to Hong Kong, the Task 2.1 and SET teams have continued to strengthen their relationship with Hong Kong Red Cross, which is an active part of IFRC on climate change issues, focusing on resilience.



SET was invited to speak at Hong Kong Red Cross's Resilience Forum: Creating a Resilient Community on 27 March 2024 to discuss climate risks and building resilience.



The Task 2.1 and SET teams hosted a dinner on 30 March 2024 for Professor Celeste Saulo, the new Secretary General of WMO, whom the Task 2.1 team met in Geneva, and her Hong Kong visit enabled further discussion about cooperation.

## SINGAPORE VISIT 15-17 APRIL 2024 – MSS, GAIP/NTU, AND HRPC@NUS

The Task 2.1 and SET teams visited Singapore and met Meteorological Service Singapore (MSS), which is the equivalent of HKO, Global Asia Insurance Partnership (GAIP) and Nanyang Technological University (NTU), and the Heat Resilience and Performance Centre (HRPC@NUS) at the National University of Singapore (NUS). The visit explored the following:

1. MSS and HKUST discussed the importance of intercomparison of climate models to ensure that the models used could reliably simulate the regional climate dynamics necessary for accurate projections and policymaking in urban planning, biodiversity, flood management, air quality etc. Further discussions will explore cooperation in conducting intercomparison within the Asia-Pacific region.
2. HKUST visited GAIP, which has NTU as its research partner, to understand how it functions to serve the insurance sector. Two key issues discussed were gaps in data availability and accessibility; and the importance of multi-disciplinary collaboration and continuous engagement between academia, industry, and regulators to solve problems. GAIP and HKUST discussed possibly cooperating at the East Asian Insurance Congress (24-27 September) to be held in Hong Kong.
3. HKUST and HRPC had a wider-ranging discussion about the risks to people and community presented by extreme heat, which affects tropical and sub-tropical climates and the importance of governments to get to grips with the risks. There should be opportunities for cooperation.



HKUST's Meeting with the Global Asia Insurance Partnership (GAIP) on 16 Apr 2024



Visit to the Business School of Nanyang Technological University (NTU) on 16 April 2024



Visit to the Heat Resilience and Performance Centre (HRPC) at National University of Singapore (NUS) on 17 April 2024

# 3

## SPECIFIC ENGAGEMENT – TASK 3

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### FINANCING THE RETROFITTING OF EXISTING BUILDINGS AT SCALE

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#### Potentials for decarbonizing buildings & other benefits

Task 3 has two integrated aspects:

- (1) The first is to show the co-benefits (saving energy, lowering humidity, and improving indoor air quality) that could be derived from retrofitting existing buildings (EBs). This aspect of the research shows the co-benefits that could be achieved at relatively modest costs for many types of buildings, ranging from commercial, residential, institutional, schools, to heritage buildings.
- (2) The second is to research the potentials for energy saving in retrofitting buildings at scale and speed in Hong Kong, as this is known to be an effective way to decarbonize highly urbanized cities, but the potentials have never been estimated.

The Task 3 and SET teams believe that serious policy and commercial attention would be paid to financing retrofitting EBs at scale if there could be credible estimates of the potentials for decarbonization (which could also bring about other beneficial outcomes for occupants).

#### Challenge I: Multiple stakeholders

In combination, the two aspects noted above require substantial stakeholder engagement to:

- **Group 1:** Identify and partner with EBs owners/managers of different types of buildings for the Task 3 team to implement low-cost methods to save energy, as well as partner with engineering consultants to conduct the retrofits, and for HKUST to measure the before/after co-benefits of the retrofits.

- **Group 2:** Engage government B/Ds so that they are aware of Task 3 and willing to provide data and follow the research process with a view to possibly consider new policies.
- **Group 3:** Engage and partner with professional bodies interested in retrofitting and/or financing retrofits so that they can give advice and see Task 3 as a co-learning opportunity to bring about new policies. The key partners in this group are the Hong Kong Green Building Council (HKGBC) and Hong Kong Green Finance Association (HKGFA).
- **Group 4:** Engage and partner with banks and property investors to seek their advice on how they might consider lending/investing in EBs retrofits at scale.

SET's vision of its role is to engage and bring all these stakeholders together so that they see themselves as a part of Task 3 that could help to 'crack the nut' on retrofitting EBs at scale and speed.

Since the start of the TBRP, SET has engaged many stakeholders – building owners, building managers, property agencies, schools, built environment professionals, equipment suppliers, engineering contractors, bankers, investors, energy providers, policymakers, and NGOs. The complexity of dealing with so many types of stakeholders was discussed in SER1 and SER2. The work of SET in Task 3 includes helping to raise awareness among the stakeholder groups, which was discussed in SER2.

At this stage of the project, SET has managed to engage all the stakeholder groups and research work is being conducted with a range of property owners and managers, who are partnering with HKUST to better understand the co-benefits.

## GROUP 1

Commercial	Institutional	Heritage	Schools	Residential
<ol style="list-style-type: none"> <li>1. TAL Building</li> <li>2. Fullerton Hotel</li> </ol>	<ol style="list-style-type: none"> <li>1. HKUST Library</li> </ol>	<ol style="list-style-type: none"> <li>1. JTI Academy</li> <li>2. Tai O Heritage Hotel</li> </ol>	<ol style="list-style-type: none"> <li>1. Law Chan Chor Si Primary School in Tuen Mun</li> </ol>	<ol style="list-style-type: none"> <li>1. None at present</li> </ol>

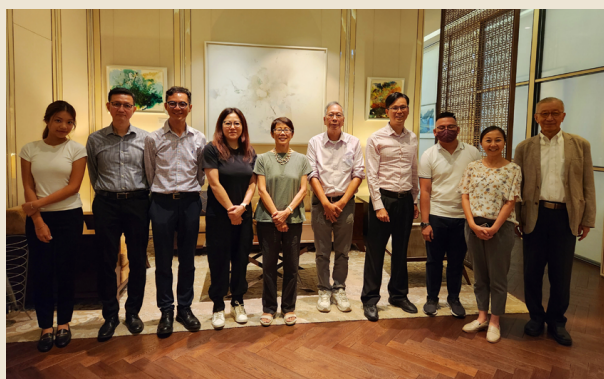
## GROUP 1: BUILDING OWNERS, RETROFIT CONSULTANTS



Discussion with TAL Building Owner on energy efficiency enhancement work on 4 August 2023.



Meeting with Shui On Management Ltd. for experience sharing on building retrofit and financing on 7 August 2023



Meeting with Keyesen Property Management Services Ltd to explore the retrofitting potential of Great Eagle Centre on 8 August 2023



Visit to Tai O Heritage Hotel on 15 December 2023.



Visit to Schneider Technology Centre on 20 December 2023

## GROUP 2: GOVERNMENT BUREAUS/ DEPARTMENTS



Meeting with Hong Kong Monetary Authority and Financial Service & Treasury Bureau HKSAR Government on 20 September 2023



Briefing to Environment and Ecology Bureau and departments on development of the 3D visualization tool on 21 December 2023.

## GROUP 3: PROFESSIONAL BODIES



Meeting with HKGBC and HKGFA on 19 February 2024

## GROUP 4: BANKS AND PROPERTY INVESTORS



Discussion with Bank of East Asia on co-benefits of building energy efficiency enhancement on 4 September 2023



Moderating a discussion panel of hosted by HKGBC Forum on Sustainable Buildings on 12 April 2024



Briefing to property development and financial services professionals on 3D Building Energy Efficiency Visualization Tool on 22 May 2024

## Challenge II: Lack of data on buildings and energy consumption

At the start of the TBRP in 2022, the Task 3 research team asked SET to source data on the number and types of buildings in Hong Kong and their electricity usage to estimate the energy saving potentials from retrofitting EBs and hence the financing options that there may be.

The difficulty for sourcing such data has remained considerable (as discussed in SER1 and SER2) because the HKSAR Government does not have fulsome data and/or data that has been or could be compiled for research, and the electricity usage data are not released by the two electricity companies on “privacy” grounds. According to government officials, the two electricity providers in

Hong Kong (CLP and HEC) were asked in 2023 to provide more annual update to EMSD, which publishes the Energy Utilization Index (EUI) for commercial buildings – an online benchmarking tool,<sup>6</sup> as an attempt to get more data released.

While the authorities have shown an interest in amassing energy consumption data used in buildings in recent times in light of the rise in public interest to better understand energy saving in buildings (see box) but the process is expected to take considerable time. As such, SET did not believe that it could access the quality of data within the TBRP timeline that could assist the research team to estimate the potential for decarbonizing EBs to calculate the capital needed.

## CURRENT HKSAR GOVERNMENT POLICY

The HKSAR Government's current policy, set in 2021, is to promote green buildings, improve buildings' energy efficiency and promote a low-carbon lifestyle to:

“... reduce the electricity consumption of commercial buildings by 30% to 40% and that of residential buildings by 20% to 30% from the 2015 level by 2050, and to achieve half of the above targets by 2035”.<sup>7</sup>

More recently, the HKSAR Government announced in its Policy Address in 2023 that it will enhance energy conservation and decarbonization in buildings:

“We will consult the trade this year on the proposal of amending the Buildings Energy Efficiency Ordinance, including extending the scope of regulation to more types of buildings, mandating the disclosure of information in energy audit reports, and shortening the interval of energy audit. Our target is

to commence the legislative exercise next year [i.e. 2024]”.<sup>8</sup>

In the subsequent government consultation paper,<sup>9</sup> the government proposed *inter alia* to include data centers within the scope of the law, to require more types of buildings to conduct mandatory energy audits, and that audits should be required every 5 years instead of 10 years, and for such audits to be disclosed. Legislative amendment is proceeding.

6. EMSD has an Energy Utilization Index (EUI) for commercial buildings to facilitate benchmarking. See <https://eui.emsd.gov.hk/en/Overview.html>.

7. Hong Kong's Climate Action Plan 2050, 8 October 2021, <https://www.info.gov.hk/gia/general/202110/08/P2021100800588.htm>.

8. Policy Address 2023, para 154 (i).

9. EMSD, Consultation Paper, *Proposed Amendments to the Buildings Energy Efficiency Ordinance* (Cap 601), November 2023, [https://www.emsd.gov.hk/beeo/en/pee/BEE0\\_consult\\_2023\\_eng.pdf](https://www.emsd.gov.hk/beeo/en/pee/BEE0_consult_2023_eng.pdf).

## Changing tactics to obtain data for building and energy usage

There appears to be no publicly accessible database on the number and types of buildings in Hong Kong. According to general government sources, references are made to Hong Kong having over 42,000 private buildings and more than 8,000 government-owned buildings i.e. a total of about 50,000 buildings.<sup>10</sup> Such generalized numbers are not useful for estimating the number and types of buildings in Hong Kong for the purpose of Task 3.

SET obtain a private source of data from an organization in the property business that had over 60,000 commercial and residential buildings in its database. This source includes address, building type, building age, number of floors, number of units in residential buildings, and square footage. This data source became the foundation for the team to create a 3D Visualization Decision-Making Support Tool (3D Tool) to estimate the potentials for energy saving/decarbonization from EB in Hong Kong.

Using what is still a limited dataset, our team consolidated and maximized the utility of the data to design a system. In 1Q/2024, the team created a prototype of the DSS designed to aid policymakers, built environment professionals, bankers, financiers, and others interested in analyzing energy utilization in buildings in Hong Kong. This tool has a dynamic 3D visualization interface that enables users to visualize

the energy consumption of buildings. The DSS tool can estimate the scope/potentials for energy saving throughout the city once retrofitting measures and standards are applied. In other words, it can function as a comprehensive platform that facilitates informed decision-making through the integration of specific criteria and mathematical functions.

For example, DSS can focus on a specific type of building, such as commercial buildings that are 40 years old. The tool can apply different packages of retrofit (e.g. investment in specific equipment types would result in X% of energy saving at \$Y) to show the potential if the retrofit could be done for a specific number of such buildings. The payback periods could also be calculated. This could help to stimulate building owners, professionals/consultants, bankers, and financiers, as well as the government to put their heads together to see what policies could be devised to conduct retrofits at scale and speed. The tool will help them to visualize the outcome—a swath of buildings bathed in green, representing not only a decrease in energy expenditure but also a significant stride towards decarbonization.

This 3D model isn't just a representation; it could be a vision of the future, a blueprint for a sustainable and cost-effective urban environment. It could become a call to action for all stakeholders to invest in a greener tomorrow.

## DSS-BUILDING ENERGY UTILIZATION

Last Updated: 18 April 2024; User Session ID:570



10. See <https://www.trade.gov/market-intelligence/hong-kong-green-building-trending#:~:text=There%20are%20over%2042%2C000%20private,of%20the%20city's%20carbon%20emissions>

### Stakeholders' briefing 22 May 2024

After creating the DSS prototype, SET organized a gathering of the four types of stakeholders to show them the tool and to call for help to ensure the tool is robust. The team needed building owners/managers to be willing to share actual data for the team to verify whether the assumptions behind the formulae for estimating energy saving potentials are credible. During the prototype development phase, a small number of actual data was used for verification purposes, but it was essential to have more data – which could only be obtained by asking a larger group of stakeholders.

The gathering of on 22 May 2024 was well attended by property owners/managers, engineering companies, bankers, property investors and government officials. Existing relationships were strengthened, and new relationships were made in pursuance of Task 3. Visits to the JTI Academy are being organized for various groups of property owners, as well as financiers, to see the co-benefits possible with retrofits even under the most challenging circumstances of heritage buildings.



### Collaboration with other stakeholders

SET's work in Task 3 resulted in invitations to work with other organizations with an agenda to promote green buildings. SET was invited to be a part of the joint project between Carbonless (a green tech and investment company) and Hong Kong Science and Technology Park (HKSTP) to promote green buildings, which has specific companies signed up as partners to test and implement green tech solutions for buildings. On 23 May 2024, at its inaugural meeting, Task 6(b) members were able to share the work of Task 3 to keep expanding the stakeholder network for engagement.



Carbonless and HKSTP event on Green Buildings and Technology where SET helped to introduced Task 3 on 23 May 2024

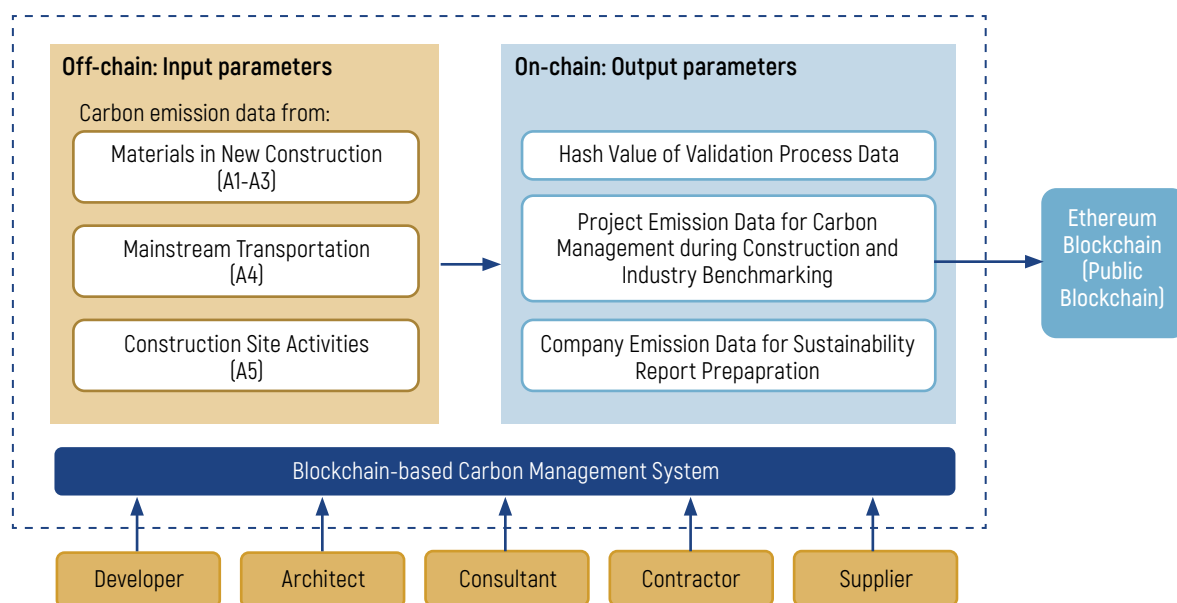


SET was invited by TBRP partners, CIC and HKGBC, to moderate an international discussion on 4 June 2024 for broadcast on 14 June 2024, where issues relevant to Task 3 were raised

## A: WORKING WITH PARTNERS – SUB-TASK 4.1

SET works closely with Sub-Task 4.1 team to track its progress, especially from the perspective of its partnership with Gammon Construction Limited, as this relationship is crucial to the success of the project.

The chart below shows the blockchain model.



Additionally, SET also coordinated and helped set up a series of stakeholder interviews for the research team, conducted between October 2023 and June 2024. The purpose of the interviews is to gain a better understanding of the current practices and challenges associated with tracking and managing embodied carbon

data in the construction supply chain, and to gather insights on stakeholders' perspectives regarding Task 4.1's proposed carbon management system. The SET team has facilitated connections with the stakeholders and/or supported discussions during the interviews as listed below.

Date	Stakeholders	Company
29 October 2023	Developer	MTR
13 December 2023	Concrete Supplier	Alliance
29 December 2023	Architect	Tony Ip Architect
29 December 2023	Contractor	Yau Lee
12 January 2024	Developer	Swire Properties
17 January 2024	Client	HKUST – Sustainability Office
19 January 2024	Structural Consultant	Arup
23 January 2024	Consultant	Arup
24 February 2024	Contractor	Chun Wo
18 June 2024	Statutory Body	Construction Industry Council



## B: COLLECTING DATA FROM AROUND THE WORLD - SUB-TASK 4.2

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The research team is currently operationalizing the algorithms that were developed during the testing phase, applying them to process the entirety of the dataset. Engagement work is expected in late 2024 or 2025 when sufficient data and insights are available to share with stakeholders.

This section of the report serves two purposes:

- Itemize the events specifically related to green finance hosted by the financial regulators in Hong Kong, where the Task 6b Team was asked to curate and moderate the discussion, as well as an event organized by a major bank in response to Green Week, in February 2024.
- Summarize the stakeholder engagement work related to the Special Assignment.

### A: PUBLIC EVENTS RELATED TO GREEN WEEK 2024

SET was invited by Hong Kong Monetary Authority (HKMA) to help curate and/or moderate events during Green Week 2024, where HKMA was the major organizer. HKMA hosted a series of events over four days (27 February to 1 March 2024), where HKMA, HKUST, and HKGFA co-organized one of the days (29 February 2024), and issues related to the TBRP were raised. Moreover, one of the members of Task 6a was invited to present on taxonomy. SET was also invited to speak on a panel to discuss green finance issues relating to Hong Kong organized by Bank of China Hong Kong during Green Week 2024. TBRP issues were discussed on that occasion.



HKUST curated and moderated a discussion panel on green finance hosted by Hong Kong Monetary Authority during the HKSAR Government's Green Week 2024 on 29 February 2024



HKUST participated on a discussion panel on green finance hosted by Bank of China Hong Kong during the HKSAR Government's Green Week 2024 on 29 February 2024



HKUST curated and moderated a discussion panel on green finance hosted by Hong Kong Monetary Authority during the HKSAR Government's Green Week 2024 on 1 March 2024

### B: SPECIAL ASSIGNMENT ON GHG ASSESSMENT TOOL + CALCULATOR FOR SMES

Under the oversight of SFC, HKUST was invited to create a carbon calculator for SMEs and a GHG assessment tool for benchmarking. HKUST spent much of 2023 creating these tools. Before they were launched, HKUST tested the tool with a range of SMEs and then surveyed them on its usefulness. Through SFC, HKUST was able to showcase and explain the products to Asian Development Bank (ADB), which is exploring in different Asian economies the efforts being made to assist SMEs to report and disclose emissions. Through the opportunity to engage with others through ADB, HKUST could see their products are technically robust and ready for use. While the development of these products is not a part of the TBRP, the products represent green finance innovations – and that such innovations are essential for Hong Kong to be a major global green finance centre. It is from this perspective that Task 6b has been involved to bring the products to greater public and industry attention.



Launching event of the GHG Assessment Tool + Calculator with HKUST and SFC (Julia Leung, CEO of SFC) explaining to audience on 21 February 2024

At this stage, Task 6b has recommended to the HKSAR Government's Financial Services and Treasury Bureau that the products should be actively promoted by the authorities, and that they could be expanded to cover areas where Hong Kong-based SMEs do business, such as beyond the GBA on the mainland, and common places in Asia such as Thailand, Vietnam, Malaysia, and Indonesia, and that the products should eventually be categorized into industry sectors so that SMEs could compare their performance with companies in their industry.

In SER2, SET made policy-relevant observations related to the rising importance of ESG disclosure, the need for financial professionals to have deeper sustainability knowledge, and to develop deeper relations between universities and professional bodies to promote multidisciplinary understanding. SER3 further observes:

### 1. CLIMATE SCIENCE AND SUSTAINABILITY KNOWLEDGE IS FOUNDATIONAL TO GREEN FINANCE

Climate science is essential for modeling and predicting future climatic changes, which in turn informs critical decision-making, policy development, and societal adaptation to the impacts of climate change, including extreme weather events. This scientific expertise is crucial for the financial services industry, enabling the assessment and management of climate-related risks, compliance with evolving regulations, optimization of investment and lending portfolios, development of innovative products, and ensuring the long-term resilience of operations.

The longstanding climate science research conducted at HKUST, as well as the work of government bodies like the HKO, provide a crucial foundation for the development of green finance in Hong Kong. By bridging the understanding gap between climate science and financial services, both in the public and private sectors, collaborative platforms for co-learning can empower Hong Kong professionals to make better informed, climate-aware decisions. This, in turn, will contribute to strengthening Hong Kong's position as a global green finance centre that is well-equipped to navigate the challenges and opportunities presented by climate change.

### 2. CO-LEARNING ACROSS GOVERNMENT, BUSINESS, AND INSURANCE SECTORS IS ESSENTIAL

Fostering knowledge-sharing and stronger collaboration between climate scientists, financial services providers, regulators, and infrastructure asset developers is crucial to enable better informed and climate-aware decision-making. Taking an integrated approach will contribute to the overall resilience of the financial system and the broader economy, including serving the financial needs of the Asia-Pacific region.

In addition to the efforts of other initiatives, such as those of HKGFA, this TBRP has brought together a diverse group of stakeholders over the past 24 months. This has helped develop a nascent community of finance and non-finance professionals who provide services to government, business, and industry decision-makers, facilitating valuable co-learning opportunities. The TBRP is playing a positive role in fostering co-learning on climate science and finance in Hong Kong. This includes the work being carried out in Task 2.1 on climate science, Task 3 on the built environment, Task 4 on the application of technology, and Task 6a on policy development. By bridging the gap between these domains, the TBRP is helping to equip Hong Kong's financial ecosystem with the necessary knowledge and tools to navigate the challenges and opportunities presented by climate change.

Continuing collaboration and knowledge-sharing among climate experts, financial practitioners, and policymakers will be essential to ensure that Hong Kong's financial system is aligned with the transition to a sustainable, low-carbon future. Leveraging this cross-disciplinary expertise will be a key competitive advantage for Hong Kong as it strives to maintain its status as a leading international financial center.

### **3. CROSS-AND-INTER-DISCIPLINARY & CROSS-SECTOR COOPERATION IS KEY**

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Addressing the complex challenges posed by climate change requires a truly cross-disciplinary and interdisciplinary approach. Professionals from diverse fields, including climate science, infrastructure, technology, banking, insurance, investing, and public policy, must come together to develop a comprehensive understanding of climate-related risks and opportunities. This collaborative effort involves actively exchanging knowledge, data, and insights to bridge the gaps between theory and practice. Integrated risk assessment and management frameworks are crucial, considering the interconnected nature of physical, transition, and liability risks. Cross-disciplinary and interdisciplinary teams can then devise innovative financial products, services, and risk-sharing and risk-transfer mechanisms to support the transition to a low-carbon economy.

Policymakers, regulators, and other stakeholders engage in this collaborative process, ensuring that climate-related policies and regulations are informed by the latest scientific evidence and practical considerations. By fostering this holistic, cross-disciplinary and interdisciplinary approach, such as through the TBRP, professionals can develop more effective and coordinated responses to the challenges posed by climate change, ultimately contributing to a sustainable, low carbon, and resilient future.

### **4. IMPROVE ESG REPORTING AND DISCLOSURE**

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Having a deeper understanding of climate-related risks and opportunities is essential for ESG (Environmental, Social, and Governance) reporting and disclosures. Professionals must work collaboratively to establish robust and standardized ESG disclosure frameworks, enabling transparent reporting of climate-related impacts. They must also deepen their understanding of physical and transition risks and translating complex climate data into actionable insights. Efforts to enable financial professionals to better integrate climate-related risks and opportunities into their analysis and decision-making, considering the potential impact on asset values, cash flows, and portfolio performance, are vital to strengthen Hong Kong as a global green finance centre.

### **5. UNDERSTANDING ROLES OF UNIVERSITIES VS COMMERCIAL CONSULTANTS**

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The continued public and private sectors support for university research is crucial due to its distinct focus, approach, and intended applications. Commercial consultants serve a specific client and can rapidly produce work tailored to the commercial needs of clients. In contrast, university researchers prioritize data collection and analysis to advance the fundamental understanding of climate and other science-based and technology-based systems. University work undergoes peer-review and publications, enabling society and commercial entities to benefit. Universities focus on many aspects of public interest, making their contribution vital to strengthening the overall economy, including Hong Kong's competence and standing as an global green finance centre.

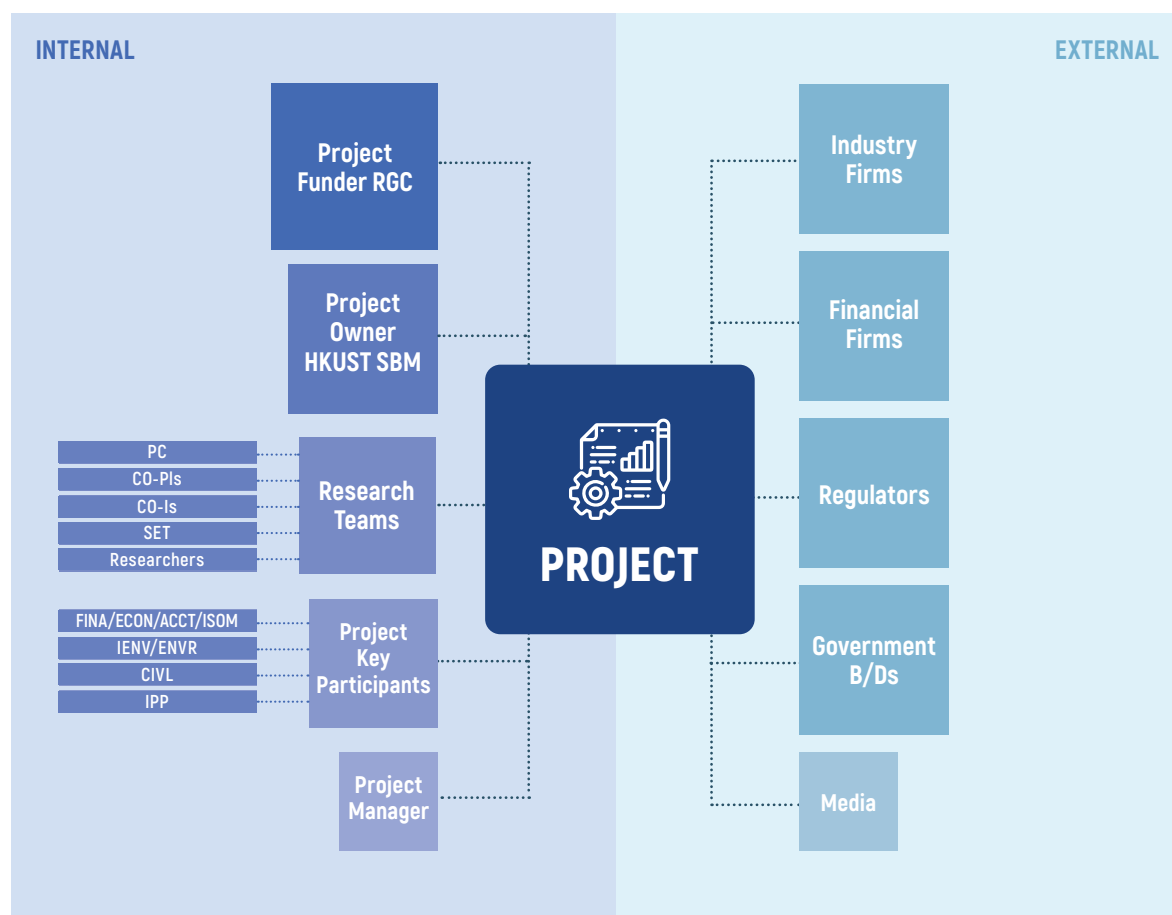
# APPENDICES

## 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
<b>Project Funder</b>	Research Grants Council (RGC), University Grants Committee	It is the funding body for the Project which has an oversight role to the Project.
<b>Project Owner</b>	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.
<b>Project Key Participants</b>	Business <ul style="list-style-type: none"> <li>- Department of Accounting (ACCT)</li> <li>- Department of Economics (ECON)</li> <li>- Department of Finance (FINA)</li> <li>- Department of Information Systems, Business Statistics and Operation (ISOM)</li> </ul>	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"> <li>- Division of Environment and Sustainability (ENVR)</li> <li>- Institute for the Environment (IENV)</li> </ul>	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"> <li>- Department of Civil and Environmental Engineering (CIVL)</li> </ul>	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"> <li>- Institute for Public Policy (IPP)</li> </ul>	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.
<b>Research Team</b>	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.
<b>Project Head Administrator</b>	Project Manager (PM)	Provide administrative support for the Project to ensure good governance.

## II: EXTERNAL STAKEHOLDERS PROFILES (PROJECT PARTNERS AND OTHERS)

### A. Financial Institutions

<b>Stakeholder</b>	Bank of International Settlement Innovation Hub (BIS) – 01
<b>Group</b>	Financial Institutions
<b>Project relationship</b>	Project Partner
<b>Profile</b>	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.<sup>1</sup>

#### 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

<b>Stakeholder</b>	Financial Services Development Council (FSDC) – 02
<b>Group</b>	Government Bureaux and Departments
<b>Project relationship</b>	Project Partner
<b>Profile</b>	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.<sup>2</sup>

#### 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.<sup>3</sup>

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

<b>Stakeholder</b>	<b>Buildings Department (BD) – 03</b>
<b>Group</b>	Government Bureaux and Departments
<b>Project relationship</b>	Potential Project Partner
<b>Profile</b>	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.<sup>4</sup>

#### 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.

<b>Stakeholder</b>	<b>Electrical and Mechanical Services Department (EMSD) – 04</b>
<b>Group</b>	Government Bureaux and Departments
<b>Project relationship</b>	Potential Project Partner
<b>Profile</b>	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.<sup>5</sup>

#### 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.<sup>6</sup>

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/](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/](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

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

#### Background

EEB consolidates policies 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.<sup>7</sup>

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.

<b>Stakeholder</b>	Financial Services and the Treasury Bureau (FSTB) – 06
<b>Group</b>	Government Bureaux and Departments
<b>Project relationship</b>	Potential Project Partner
<b>Profile</b>	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.<sup>8</sup>

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](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

<b>Stakeholder</b>	Home Affairs Department (HAD) – 07
<b>Group</b>	Government Bureaux and Departments
<b>Project relationship</b>	Potential Project Partner
<b>Profile</b>	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.

<b>Stakeholder</b>	Hong Kong Observatory (HKO) – 08
<b>Group</b>	Government Bureaux and Departments
<b>Project relationship</b>	Potential Project Partner
<b>Profile</b>	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.<sup>9</sup>

#### 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.<sup>10</sup>

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/abouthko/aboutus.htm>

10. See [https://www.hko.gov.hk/en/climate\\_change/combating\\_climate\\_change.htm](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

<b>Stakeholder</b>	Housing Bureau [HB] - 09
<b>Group</b>	Government Bureaux and Departments
<b>Project relationship</b>	Potential Project Partner
<b>Profile</b>	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.<sup>11</sup>

#### 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.

### C. Regulators/Statutory Bodies

<b>Stakeholder</b>	Hong Kong Exchanges and Clearing Limited (HKEX) - 10
<b>Group</b>	Regulators
<b>Project relationship</b>	Project Partner
<b>Profile</b>	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.<sup>12</sup>

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.<sup>13</sup> With the launch of the *Sustainable and Green Exchange* (STAGE),<sup>14</sup> 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.

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

12. See [https://www.hkex.com.hk/Global/Exchange/FAQ/Getting-Started/Regulation-of-the-Hong-Kong-Market?sc\\_lang=en#collapse-1](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](https://www.hkex.com.hk/Join-Our-Market/Sustainable-Finance/HKEX-STAGE?sc_lang=en)

## II: EXTERNAL STAKEHOLDERS PROFILES (PROJECT PARTNERS AND OTHERS)

### C. Regulators/Statutory Bodies

<b>Stakeholder</b>	Hong Kong Monetary Authority (HKMA) – 11
<b>Group</b>	Regulators
<b>Project relationship</b>	Project Partner
<b>Profile</b>	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.<sup>15</sup>

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.<sup>16</sup> 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.

<b>Stakeholder</b>	Securities and Futures Commission (SFC) – 12
<b>Group</b>	Regulators
<b>Project relationship</b>	Project Partner
<b>Profile</b>	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.<sup>17</sup>

#### 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.

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>

17. See [https://www.gov.hk/en/about/abouthk/factsheets/docs/financial\\_services.pdf](https://www.gov.hk/en/about/abouthk/factsheets/docs/financial_services.pdf)

## II: EXTERNAL STAKEHOLDERS PROFILES (PROJECT PARTNERS AND OTHERS)

### C. Regulators/Statutory Bodies

<b>Stakeholder</b>	Insurance Authority (IA) – 13
<b>Group</b>	Regulators
<b>Project relationship</b>	Potential Project Partner
<b>Profile</b>	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.<sup>18</sup>

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.

<b>Stakeholder</b>	Urban Renewal Authority [URA] – 14
<b>Group</b>	Statutory Bodies
<b>Project relationship</b>	Potential Project Partner
<b>Profile</b>	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.<sup>19</sup>

#### 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.

18. See [https://www.gov.hk/en/about/abouthk/factsheets/docs/financial\\_services.pdf](https://www.gov.hk/en/about/abouthk/factsheets/docs/financial_services.pdf)

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

## II: EXTERNAL STAKEHOLDERS PROFILES (PROJECT PARTNERS AND OTHERS)

### C. Regulators/Statutory Bodies

<b>Stakeholder</b>	Housing Society [HS] - 15
<b>Group</b>	Statutory Bodies
<b>Project relationship</b>	Potential Project Partner
<b>Profile</b>	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.<sup>20</sup>

#### 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.

### D. Professional Bodies/NGOs

<b>Stakeholder</b>	Hong Kong Green Building Council (HKGBC) - 16
<b>Group</b>	Professional Bodies/NGOs
<b>Project relationship</b>	Project Partner
<b>Profile</b>	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*<sup>21</sup> and *CIC Green Product Certification*<sup>22</sup> 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.

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

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

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

## II: EXTERNAL STAKEHOLDERS PROFILES (PROJECT PARTNERS AND OTHERS)

### D. Professional Bodies/NGOs

<b>Stakeholder</b>	Hong Kong Green Finance Association (HKGFA) – 17
<b>Group</b>	Professional Bodies/NGOs
<b>Project relationship</b>	Project Partner
<b>Profile</b>	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.<sup>23</sup>

#### 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.

<b>Stakeholder</b>	Jao Tsung-I Academy (JTIA) – 18
<b>Group</b>	Professional Bodies/NGOs
<b>Project relationship</b>	Project Partner
<b>Profile</b>	Low level of influence, moderate level of interest

#### Background

Jao Tsung-I Academy is an NGO operating in heritage buildings and site.<sup>24</sup>

#### Interests

JTIA is a century-old heritage compound spreading over 32,000 square meters of hillside. Its buildings represent the most challenging type of retrofit due to its heritage nature. It has become a pilot showcasing the cost-effective technical solution for retrofit under Task 3.

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

24. See <https://www.jtia.hk/>

## II: EXTERNAL STAKEHOLDERS PROFILES (PROJECT PARTNERS AND OTHERS)

### D. Professional Bodies/NGOs

<b>Stakeholder</b>	Business Environment Council Limited (BEC) – 19
<b>Group</b>	Professional Bodies/NGOs
<b>Project relationship</b>	Project Partner
<b>Profile</b>	Moderate level of influence, high level of interest

#### Background

BEC is an independent, non-profit membership organization established in 1992 by the business sector in Hong Kong to promote sustainability in the corporate sector.<sup>25</sup>

#### Interests

BEC offers a platform for business sector discussion about sustainability matters. It provides advisory, research, assessment, training and award programs for government, business and the community. By engaging BEC, HKUST could reach out to key stakeholders for all the tasks under TBR Project.

<b>Stakeholder</b>	Hong Kong Red Cross (Red Cross) – 20
<b>Group</b>	Professional Bodies/NGOs
<b>Project relationship</b>	Project Partner
<b>Profile</b>	Low level of influence, moderate level of interest

#### Background

Red Cross is the local office of an internationally known NGO.<sup>26</sup>

#### Interests

One of the missions of Red Cross is to help the vulnerable groups via emergency relief & disaster preparedness.

Tasks/Sub-Tasks related to extreme weather forecast and development of early-warning system under Tasks 2.1.

25. See <https://bec.org.hk/>

26. See <https://www.redcross.org.hk/>

## II: EXTERNAL STAKEHOLDERS PROFILES (PROJECT PARTNERS AND OTHERS)

### D. Professional Bodies/NGOs

<b>Stakeholder</b>	Hong Kong Federation of Insurers (HKFI) - 21
<b>Group</b>	Professional Bodies/NGOs
<b>Project relationship</b>	Project Partner
<b>Profile</b>	High level of influence, high level of interest

#### Background

HKFI is the insurance sector's federation to advance and promote the development of the insurance business in Hong Kong.<sup>27</sup>

#### Interests

HKFI acts as a communication channel between its members and the Insurance Authority. They launched the Insurance Industry Climate Charter in 2024.

Task/Sub-Task 2.1 has partnered with HKFI together with IA for collaborating with the insurance sector on climate science issues. This partnership is expected to grow during the lifetime of the project.

### E. Industry Firms

<b>Stakeholder</b>	Gammon Construction Limited (Gammon) - 22
<b>Group</b>	Industry Firms
<b>Project relationship</b>	Project Partner
<b>Profile</b>	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.

27. <https://www.hkfi.org.hk/>

## II: EXTERNAL STAKEHOLDERS PROFILES (PROJECT PARTNERS AND OTHERS)

### E. Industry Firms

<b>Stakeholder</b>	Link Real Estate Investment Trust (LINK) – 23
<b>Group</b>	Industry Firms
<b>Project relationship</b>	Project Partner
<b>Profile</b>	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.

<b>Stakeholder</b>	Cathay Pacific Airways (CX) - 24
<b>Group</b>	Industry Firms
<b>Project relationship</b>	Potential Project Partner
<b>Profile</b>	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.<sup>28</sup>

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.

28. See [https://sustainability.cathaypacific.com/wp-content/uploads/2022/05/Cathay\\_Pacific\\_SDR\\_2021\\_EN\\_Final.pdf](https://sustainability.cathaypacific.com/wp-content/uploads/2022/05/Cathay_Pacific_SDR_2021_EN_Final.pdf)

## II: EXTERNAL STAKEHOLDERS PROFILES (PROJECT PARTNERS AND OTHERS)

### E. Industry Firms

<b>Stakeholder</b>	<b>MTR Corporation Limited (MTR) – 25</b>
<b>Group</b>	Industry Firms
<b>Project relationship</b>	Potential Project Partner
<b>Profile</b>	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.<sup>29</sup>

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.

<b>Stakeholder</b>	<b>Sino Group (SINO) – 26</b>
<b>Group</b>	Industry Firms
<b>Project relationship</b>	Potential Project Partner
<b>Profile</b>	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.<sup>30</sup> 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.

29. See [https://www.mtr.com.hk/sustainability/2021/en/pdf/MTR\\_CDP\\_Response\\_2021.pdf](https://www.mtr.com.hk/sustainability/2021/en/pdf/MTR_CDP_Response_2021.pdf)

30. 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)

## II: EXTERNAL STAKEHOLDERS PROFILES (PROJECT PARTNERS AND OTHERS)

### E. Industry Firms

<b>Stakeholder</b>	Sun Hung Kai Properties (SHK) – 27	<b>Stakeholder</b>	Swire Properties Limited (SPL) – 28
<b>Group</b>	Industry Firms	<b>Group</b>	Industry Firms
<b>Project relationship</b>	Potential Project Partner	<b>Project relationship</b>	Potential Project Partner
<b>Profile</b>	Low level of influence, moderate level of interest	<b>Profile</b>	Low level of influence and interest
<b>Background</b>		<b>Background</b>	
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.		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.	
<b>Interests</b>		<b>Interests</b>	
SHK aims for sustainable development in planning, design, materials sourcing and landscaping to save energy, reduce waste and create a better environment. <sup>31</sup> They are interested in building retrofits to save energy and carbon.		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.	
Tasks/Sub-Tasks that related to listed firms, developer, building owner such as 1.1, 1.2, 3 can engage SHK.		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.	

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

## II: EXTERNAL STAKEHOLDERS PROFILES (PROJECT PARTNERS AND OTHERS)

### E. Industry Firms

<b>Stakeholder</b>	Chinachem Group (Chinachem) – 29
<b>Group</b>	Industry Firms
<b>Project relationship</b>	Project Partner
<b>Profile</b>	Moderate level of influence, moderate level of interest

#### Background

Chinachem Group is a prominent privately-owned property developer in Hong Kong, with a real estate heritage dating back to the 1960s.<sup>32</sup>

#### Interests

Chinachem has a solid reputation in sustainability and has an interesting portfolio of commercial and residential properties, including heritage buildings, such as Central Market. It is most relevant for Task 3 but it has an interest in Task 2.1 and potentially Task 4.

<b>Stakeholder</b>	SOCAM Development Ltd (SOCAM) – 30
<b>Group</b>	Industry Firms
<b>Project relationship</b>	Project Partner
<b>Profile</b>	Moderate level of influence, moderate level of interest

#### Background

SOCAM is a member of Shui On Group, principally engaged in construction and property businesses, with operations spanning Hong Kong, Macau and Mainland China.<sup>33</sup>

#### Interests

SOCAM works on building retrofits services and is most relevant to Task 3.

32. See <https://www.chinachemgroup.com/>

33. See <https://www.socam.com/>

## II: EXTERNAL STAKEHOLDERS PROFILES (PROJECT PARTNERS AND OTHERS)

### E. Industry Firms

<b>Stakeholder</b>	Great Eagle Holdings Ltd. (Great Eagle) – 31
<b>Group</b>	Industry Firms
<b>Project relationship</b>	Project Partner
<b>Profile</b>	Low level of influence, moderate level of interest

#### Background

Great Eagle Group's principal holdings include Champion Real Estate Investment Trust and Langham Hospitality Investments with assets in Hong Kong and internationally.<sup>34</sup>

#### Interests

Great Eagle Group is interested in saving costs through retrofits to improve sustainability and financial performance. It is most relevant to Task 3.

<b>Stakeholder</b>	Schneider Electric (Schneider) – 32
<b>Group</b>	Industry Firms
<b>Project relationship</b>	Project Partner
<b>Profile</b>	Moderate level of influence, high level of interest

#### Background

An international company, headquartered in Hong Kong, Schneider is an energy efficiency service provider that services many companies in Hong Kong and internationally.<sup>35</sup>

#### Interests

Schneider has a variety of technologies to save energy and is interested in spreading knowledge about energy saving and decarbonization. It has data on retrofits and performance of buildings and is an important partner for Task 3.

34. See <https://www.greateagle.com.hk/>

35. See <https://www.se.com/>

## III: RECORD OF INTERNAL STAKEHOLDER COMMUNICATION

Task No.	Meetings	Group	Stakeholders
All	9 Nov 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-Vinai (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 Aug 2022	SBM, CUHK	Prof. Christine Loh (SET), Ms. Olivia To (SET), Prof. Abhiroop Mukherjee (Co-PI), Prof. Darwin Choi (Co-PI)
1.2	8 Aug 2022	HKU	Prof. Christine Loh (SET), Ms. Olivia To (SET), Prof. Guojun He (Co-PI)
1.3	17 Aug 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 Aug 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 Aug 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 Jun 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 Aug 2022	SBM	Prof. Christine Loh (SET), Prof. Chu Zhang (PC/Co-PI), Prof. Alminas Zaldokas (Co-PI)
	2 Sep 2022	ENVR	Prof. Christine Loh (SET), Ms. Olivia To (SET), Prof. Alexis Lau (Co-PI)
3 & 4.1	5 Oct 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 Oct 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 Oct 2022	ENVR	Prof. Christine Loh (SET), Ms. Olivia To (SET), Prof. Alexis Lau (Co-PI)
4.1	2 Sep 2022	ENVR	Prof. Christine Loh (SET), Ms. Olivia To (SET), Prof. Alexis Lau (Co-PI)
4.1 & 4.2	22 Aug 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 Sep 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 Mar 2022	SBM	Prof. Kar Yan Tam (Co-PI), Ms. Olivia To (SET)
	8 Aug 2022	SBM	Prof. Kar Yan Tam (Co-PI), Prof. Christine Loh (SET)
	22 Aug 2022	SBM	Prof. Christine Loh (SET), Mr. Lionel Mok (Researcher), Ms. Christy Yeung (PM)
6	27 Jan 2022	IPP	Ms. Olivia To (SET), Dr. Coco Du (Co-I), Ms. Sherry Li (Researcher)
	15 Mar 2022	IPP, ENVR	Prof. Ye Qi (Co-PI), Dr. Coco Du (Co-I), Prof. Jimmy Fung (Co-PI), Ms. Olivia To (SET)
	1 Aug 2022	IPP	Dr. Coco Du (Co-I), Ms. Olivia To (SET)
PM	22 Aug 2022	SBM, IENV	Prof. Christine Loh (SET), Ms. Olivia To (SET), Ms. Michelle Wong and Ms. Christy Yeung (PM)
2, 3, 4, 5 & 6 (CARE 2022)	1 Nov 2022	VP (R&D), Public Affairs Director (HKUST)	Tim Cheng, Daisy Chan (HKUST), Christine Loh (SET)
	21 Nov 2022	Public Affairs Director (HKUST)	Daisy Chan (HKUST), Christine Loh (SET)
2, 3 & 4.2	13 Jan 2023	ENVR	Alexis Lau (Co-PI), Michelle Wong (HKUST), Christine Loh (SET)
2	7 Feb 2023	ENVR	Jimmy Fung (Co-PI), Christine Loh (SET)
4	13 Mar 2023	ENVR	Dancy Zhang, Michelle Wong (HKUST), CF Lam (SET)
4	17 Mar 2023	ENVR	Karina Kuan, Michelle Wong (HKUST), CF Lam (SET)
2	24 Mar 2023	ENVR	Alexis Lau (Co-PI), Jimmy Chan, Christy Yeung (HKUST), Christine Loh, CF Lam (SET)
2 & 3	27 Mar 2023	ENVR/SBM	Zhang Chu (PC), Christine Loh, CF Lam (SET)
3	19 Jun 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)

### III: RECORD OF INTERNAL STAKEHOLDER COMMUNICATION

Task No.	Date	Institutions	Attendance	Discussion Topics
Task 3	10 Jul 2023	ENVR/ Library Office (LO)	Edward Spodick, Irene Wong, Tony Chung, CF Lam	Finalization of sensor installation plan for UST Library for energy efficiency and indoor air quality improvement
Task 3	15 Aug 2023	ENVR	Christine Loh, Alexis Lau, Michelle Wong, CF Lam	Discussion on possible uses of a building database provided by a property agency for estimation of energy consumption of buildings in HK
Tasks 3, 4.1 & 6(b)	5 Sep 2023	ENVR	Alexis Lau, Jack Cheng, Karina Kuan, Helen Kwok, Rannie Xu, CF Lam	Discussion on progress of Tasks 3 and 4.1
Task 3	7 Sept 2023	ENVR	Christine Loh, Alexis Lau, Jimmy Chan, Michelle Wong, CF Lam	Discussion on possible uses of a building database provided by a property agency for estimation of energy consumption of buildings in HK
Task 6	10 Sep 2023	ENVR	Christine Loh, Keith Chan, Lionel	Research on taxonomy
Task 3	28 Sep 2023	ENVR/SBM	Christine Loh, Alexis Lau, Jimmy Chan, Zhang Chu, Michelle Wong, CF Lam	Estimation of energy consumption of buildings in HK
All Tasks	28 Sep 2023	ENVR/SBM	Christine Loh, Christy Yeung	Discussion on progress of TBR
Tasks 3, 4.1 & 6(b)	13 Dec 2023	ENVR	Alexis Lau, Jack Cheng, Karina Kuan, Helen Kwok, Rannie Xu, CF Lam	Discussion on progress of Tasks 3 and 4.1
Task 3	18 Dec 2023	ENVR / Sustainability Office (SO) / Library Office (LO) / Campus Management Office (CMO)	Marcus Leung (SO) Edward Spodick (LO), Tom Chan, Tom Lui, Thomas Pau, Andy Yeung (CMO) Danny Ip, Wilson Ip, Leo Lee (Kins Eng) Jimmy Fung, Tony Chung, CF Lam	Discussion on potential collaboration on retrofitting UST Library for energy efficiency and indoor air quality improvement
Task 6(a)	18 Dec 2023	ENVR/SBM	Chan Kai Lung, Kamila Abdrassilova (SBN), Christine Loh, Jimmy Chan, CF Lam	Discussion on potential collaboration on the development of Sovereign ESG Index
Tasks 3, 4.1 & 6(b)	3 Jan 2024	ENVR	Alexis Lau, Jack Cheng, Karina Kuan, Helen Kwok, Rannie Xu, CF Lam	Discussion on progress of Tasks 3 and 4.1
Task 4.1	17 Jan 2024	ENVR / Sustainability Office (SO)	Davis Bookhart, Terri Tan, Karina Kuan, CF Lam	Experience sharing on decarbonization work and reporting
All Tasks	26 Feb 2024	ENVR/SBM	ZHANG Chu, Tam Kar Yan, Hui Kai Leung, Qi Ye, Coco Du, Christy Yeung, Crystal Tsang, Jimmy Fung, Alexis Lau, Christine Loh, CF Lam	1st ExCo Meeting for TBR • Progress updates of research tasks • GHG emission tools developed for SFC • Formation of Advisory Board • Project communication and promotion • Project management
Task 3	28 Feb 2024	ENVR / Sustainability Office (SO) / Library Office (LO) / Campus Management Office (CMO)	Marcus Leung (SO) Thomas Pau, Tom Chan (CMO) Danny Ip, Wilson Ip, Leo Lee (Kins Eng) Jimmy Fung, Alexis Lau, Tony Chung, CF Lam	Discussion on potential collaboration on retrofitting UST Library for energy efficiency and indoor air quality improvement
Tasks 3, 4.1 & 6(b)	7 Mar 2024	ENVR	Alexis Lau, Jack Cheng, Karina Kuan, Helen Kwok, Rannie Xu, CF Lam	Discussion on progress of Tasks 3 and 4.1
Task 6(a)	15 Mar 2024	ENVR/SBM	Qi Ye, Coco Du, Christy Yeung, Zhao Xiafan, Christine Loh, CF Lam	Discussion on launching of three green finance research study reports
Task 3	26 Apr 2024	ENVR	Christine Loh, Jimmy Chan, CF Lam	Discussion on the development of 3D Building Energy Visualization Tool

### III: RECORD OF INTERNAL STAKEHOLDER COMMUNICATION

Task No.	Date	Institutions	Attendance	Discussion Topics
Task 3	26 Mar 2024	ENVR / Sustainability Office (SO) / Library Office (LO) / Campus Management Office (CMO)	Marcus Leung (SO) Alex Cheung, Wilson Chan, Hoyce Ho (CMO) Edward Spodick, Irene Wong, Clara (LO) Jimmy Fung, Alexis Lau, CF Lam	Discussion on implementation of UST Library retrofitting for energy efficiency and indoor air quality improvement
Tasks 3, 4.1 & 6(b)	10 May 2024	ENVR	Alexis Lau, Jack Cheng, Karina Kuan, Helen Kwok, Rannie Xu	Discussion on progress of Tasks 3 and 4.1
Task 3	17 May 2024	ENVR/SENG	Christine Loh, Alexis Lau, Jimmy Chan, Walter Wang, CF Lam	Discussion on the development of 3D Building Energy Visualization Tool
All Tasks	20 May 2024	ENVR/SBM	ZHANG Chu, Tam Kar Yan, Hui Kai Leung, Qi Ye, Coco Du, Christy Yeung, Crystal Tsang, Jimmy Fung, Alexis Lau, Christine Loh	2nd ExCo Meeting for TBR <ul style="list-style-type: none"> <li>• Progress updates of research tasks</li> <li>• Project team members' participation at the 7th RAQM Forum</li> <li>• Purchase of LGX Luxembourg Stock Exchange Data Hub</li> <li>• Project communication and promotion</li> <li>• Project management</li> </ul>
Task 2.1 & 6(b)	5 Jun 2024	ENVR/SocSci	Kevin Tam (SocSci), Christine Loh, CF Lam	Exploration of potential collaboration on climate-related research and engagement activities
Task 2.1 & 6(b)	28 Jun 2024	ENVR/SocSci	Kevin Tam (SocSci), Christine Loh, Alexis Lau, Jimmy Fung, Chen Fei, CF Lam	Exploration of potential collaboration on climate-related research and engagement activities

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

Task No.	Date	Organizations	Stakeholders
2.1, 2.2	23 Sep 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 Oct 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 Nov 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 Dec 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 Apr 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-Vinai
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 Aug 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 Sep 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 Oct 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 Oct 2022	Dunwell Enviro-Tech (Holdings) Ltd.	Daniel Cheng (Dunwell), Christine Loh (SET)
	14 Oct 2022	The Bank of East Asia	Vincent Wong (BEA), Christine Loh (SET)
	20 Oct 2022	Hongkong Electric	Bill Ho (HKE), Christine Loh (SET)
	27 Oct 2022	Olympus Capital	Frederic Long (Olympus), Christine Loh (SET)
	3 Nov 2022	PAG	Lincoln Pan (PAG), Christine Loh (SET)
	7 Nov 2022	Urban Land Institute (ULI)	Eli Konvitz (ULI), Christine Loh (SET)
	7 Nov 2022	Hongkong Electric	Charles Tsai (HEC), Christine Loh, Olivia To (SET)
	8 Nov 2022	Hong Kong Science and Technology Park (HKSTP)	Gracie Ng (HKSTP), Aldous Mak (HKSTP), Christine Loh (SET)

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

Task No.	Date	Organizations	Stakeholders
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)	11 Nov 2022	Hong Kong Green Finance Association (HKGFA)	Jenny Lee (HKGFA), Christine Loh (SET)
	23 Nov 2022	The Bank of East Asia	Vincent Wong (BEA), Christine Loh (SET)
	8 Dec 2022	The Bank of East Asia	Kelvin Au (BEA), Christine Loh, Olivia To (SET)
	28 Dec 2022	HKEX	Ken Chiu (HKEX), Christine Loh (SET)
6	15 Dec 2022	Standard Chartered Bank (SCB)	Tracy Wong Harris (SCB), Christine Loh (SET)
	30 Dec 2022	British Consulate Hong Kong	Sarah Robinson (BCHK), Christine Loh (SET)
2	2 Jan 2023	Zurich Insurance	Ericsson Chan (ZI), Christine Loh (SET)
3	2 Jan 2023	Great Eagle Holdings Ltd., HKGFA	KS Lo (Great Eagle), Ma Jun (HKGFA), Grace Hui (HKUST)
	24 Jan 2023	ULI	Eli Konvitz (ULI), Christine Loh (SET)
2 & 6	8 Feb 2023	Hang Seng Index (HSI)	Arnold Hui (HSI), Christine Loh (SET)
3	9 Feb 2023	ULI	Eli Konvitz, Phil Kim (ULI), Christine Loh (SET)
3	23 Feb 2023	ULI	Eli Konvitz (ULI), Christine Loh (SET)
2	15 Mar 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 Mar 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 Mar 2023	Institute of Bankers (IOB)	Kathy Chan and Philip Kam (IOB), Christine Loh (SET)
2	22 Mar 2023	Insurance Authority (IA)	Clement Cheung (IA), Christine Loh (SET)
3	24 Mar 2023	CLP	Pubudu Abayasiri (CLP), Christine Loh (SET)
External Collaboration	27 Mar 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 Apr 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 Apr 2023	BEA	Zoe Lau, Doris Tong, David Kim, Stephen Leung (BEA), Kar Yan Tam (Co-PI), Christine Loh (SET)
2	14 Apr 2023	Insurance Authority (IA)	Vicki Wong and Frankie Chan (HKIA), Christine Loh (SET)
6	17 Apr 2023	SCB	Tracy Wong Harris (SCB), Christine Loh (SET)
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)

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

Task No.	Date	Organizations	Stakeholders
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 (All were related to GFANZ seminar prior to 28 June 2023 plus there were a large number of email and phone exchanges)	29 May 2023	Academy of Finance (AoF)	KC Kwok (AoF), Christine Loh (SET)
	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 No.	Date	Organizations	Stakeholders
3	27 Jun 2023	UBS	Tasos Zavitsanakis(UBS), Christine Loh (SET)
4	29 Jun 2023	Yau Lee Construction Co. Ltd. (YL)	Koeman Chan, Benny Liu (YL), Karina Kuan, Rannie Xu (HKUST), CF Lam (SET)
4	30 Jun 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 Jun 2023	MTR Corporation Ltd. (MTR)	Jessica Chan, YS Cheng (MTR), Jack Cheng, Karina Kuan, Rannie Xu (HKUST), CF Lam (SET)

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

Task No.	Date	Institutions	Attendance	Discussion Topics
Task 2.1	5 July 2023	French Consul General (FCG)	<b>FCG:</b> Christile Drulhe, Consul General Louis Doucet, Publicity Officer <hr/> <b>HKUST:</b> Christine Loh	Climate change co-operation
Task 3	7 July 2023	Housing Bureau / HK Housing Society / Urban Renewal Authority	<b>Housing Bureau:</b> Winnie Ho, Secretary for Housing <hr/> <b>HK Housing Society:</b> KK Ling, Deputy Chairman <hr/> <b>URA:</b> CS Wai, Managing Director, Carolyn Fung, Executive Director (Operation) <hr/> <b>HKUST:</b> Christine Loh, Grace Hui	Exploration of potential collaboration on the development of carbon credit for public housing developments
Task 3	26 July 2023	Housing Bureau / Housing Department	<b>Housing Bureau:</b> Winnie Ho, Secretary for Housing, Victor Tai, Under-Secretary for Housing <hr/> <b>Housing Department:</b> (Architectural Team) Max Wong, AD Project 3 Andrew Lam, AD Project 2 Tim Li, Chief Architect <hr/> (Estate Management Team) Ricky Yeung, Deputy Director Michael Wong, AD(EM)3 <hr/> (Press and Information Team) <hr/> <b>Consultant Teams:</b> Architecture Commons - Eric Ho HK Design Centre - Sam CUHK - Prof Mo Hong Kong Institute of Landscape Architects - Paul Chan Education for Good - Terence Chan <hr/> <b>HKUST:</b> Christine Loh, CF Lam	<ul style="list-style-type: none"> <li>This Action Group on Design for Well-being (AGWB) is one of the initiatives launched to enhance the supply and quality of public housing</li> <li>A study was commissioned in May 2023 to develop "Well-Being" design guidelines for new public housing projects</li> <li>Sharing the view of UST on the definition of well-beings for public housing and how to achieve this goal</li> </ul>
Task 3	1 Aug 2023	Kins Engineering Ltd. (Kins)	<b>Kins:</b> Danny Ip, Wilson Ip <hr/> <b>HKUST:</b> Christine Loh, Grace Hui, Michelle Wong, CF Lam	Exploration of potential collaboration on pilot projects for commercial building with application of carbon credit
Task 3	4 Aug 2023	TAL	<b>TAL:</b> Harry Lee, Chairman <hr/> <b>Kins:</b> Danny Ip, Wilson Ip <hr/> <b>HKUST:</b> Christine Loh, Grace Hui, Michelle Wong, CF Lam	Exploration of potential collaboration on pilot projects for commercial building with application of carbon credit

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

Task No.	Date	Institutions	Attendance	Discussion Topics
Task 3	7 Aug 2023	SOCAM Development Ltd. (Shui On Management Ltd)	<b>Shui On:</b> Kevin Lee, Head of Smart Facilities Management Karene Sun, Senior Manager, Project Management Hazel Wong, General Manager <hr/> <b>Carnot Innovations:</b> Ashish Jerry Justin, Co-Founder and CEO Chris Choy, Co-Founder and CTO <hr/> <b>UBS:</b> Tasos Zavitsanakis, Managing Director <hr/> <b>HKUST:</b> Christine Loh, Grace Hui, Michelle Wong, CF Lam	<ul style="list-style-type: none"> <li>Experience sharing on the cost/benefits of retrofits to come up with a financing plan</li> <li>Experience sharing on Cooling as a Service Project to enhance energy efficiency of Shui On Centre</li> </ul>
Task 3	8 Aug 2023	Keysen Property Management Services Ltd. (Great Eagle Holdings Ltd.)	<b>Keysen:</b> Tim Chu, Director and General Manager Tony Lee, Energy Manager Henry Chan, Director of Projects <hr/> <b>Kins:</b> Danny Ip, Wilson Ip <hr/> <b>HKUST:</b> Christine Loh, Grace Hui, Michelle Wong, CF Lam	Exploration of potential collaboration on the development of carbon credit for public housing developments
Task 2.1	9 Aug 2023	Insurance Authority (IA)	<b>IA:</b> Clement Cheung, CEO Vicki Wong, Senior External Relations Manager Frankie Chan, Senior Manager (Policy and Development) <hr/> <b>HKUST:</b> Christine Loh, CF Lam	Exploration of potential collaboration on climate risk modelling and development of climate-related insurance products
Task 3	10 Aug 2023	CLP Power Hong Kong Ltd. (CLP)	<b>CLP:</b> Jim Taylor, Senior Director of Planning <hr/> <b>HKUST:</b> Christine Loh, CF Lam	Date sharing on building energy consumption
Task 3	4 Sept 2023	Jao Tsung-I Academy (JTIA)	<b>JTIA:</b> KK Wong, Vice Chairman Mike Lai, CEO Kiki Ko, Deputy CEO <hr/> <b>TAL Group:</b> Harry Lee, Chairman <hr/> <b>Kins:</b> Danny Ip, Wilson Ip <hr/> <b>ACI:</b> John Lo, Founder <hr/> <b>HKUST:</b> Christine Loh, Alexis Lau, Grace Hui, Michelle Wong, CF Lam, Tony Chung, LuLu Li	<ul style="list-style-type: none"> <li>Meeting between JTIA top management and UST Research Team on the progress and preliminary results of the pilot retrofit project</li> <li>Discussion on possible collaboration on extending the scale of retrofitting</li> </ul>

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

Task No.	Date	Institutions	Attendance	Discussion Topics
Tasks 2.1 & 3	4 Sept 2023	Bank of East Asia (BEA)	<b>BEA:</b> (IT & Fintech Development Department) Stephen Leung, Department Head  (Fintech Development Department) Anny Mak, Brenda Wong, Jamie Wong  (Enterprise Banking Department - Wholesales Banking) Richard Yeung, Senior Manager Ivan Ho, Jasmine Huang  (ESG Risk & Oversight Department) Katie Tam, Senior Manager Felix Lai, Senior Manager Kelvin Chan  (Sustainability Department) Jack Lam, Jonny Hui  (Data Science & Governance Department) Penny Tse, Senior Manager Billy Lau, Senior Manager Tammy Kwok, Senior Manager KarYan Chua, Senior Manager SinKi Ip, Emily Ng, Michael Yao	Exploration of potential collaboration on:  <ul style="list-style-type: none"> <li>Making sense of climate risks (Task 2)</li> <li>Sharing of best practice on ESG data classification and access control; and partnering on creation of risk data for loan-making</li> <li>Loans to building retrofits and carbon credits (Task 3)</li> <li>Periodic sharing of new ideas and developments</li> </ul>
			<b>HKUST:</b> Christine Loh, Jimmy Chan, Shannon Ho, CF Lam	
Tasks 2.1 & 3	12 Sept 2023	Bank of East Asia (BEA)	<b>BEA:</b> Anny Mak, Jamie Wong, Fintech Development Department  <b>HKUST:</b> Jimmy Chan, Shannon Ho, CF Lam	Follow-up discussion on actions proposed in the meeting held on 4 September 2024
Tasks 2.1 & 6(b)	20 Sept 2023	HKMA / FSTB	<b>FSTB:</b> Almaz Leung, Principal Assistant Secretary Noel Tsang, Assistant Secretary  <b>HKMA:</b> Cho-hoi Hui, Head (Banking Policy) Georgina Lok, Head (Market Development) Ting Wang, Senior Manager (Market Development) Willy Mak, Senior Manager (Banking Policy)  <b>HKUST:</b> Christine Loh, CF Lam	Exploration of potential collaboration on:  <ul style="list-style-type: none"> <li>fostering Hong Kong to become an international green financial centre</li> <li>showcasing local green finance research capability to overseas</li> </ul>

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

Task No.	Date	Institutions	Attendance	Discussion Topics
Task 2.1	25 Sept 2023	HKU School of Public Health	<b>HKU:</b> David Bishai, Director of School of Public Health Cui Guo, Department of Urban Planning and Design <hr/> <b>HKUST:</b> Alexis Lau, Christine Loh, Jimmy Chan, Michelle Wong, CF Lam	Exploration of potential collaboration on environmental health research including: <ul style="list-style-type: none"> <li>• spatial map of cancer over time</li> <li>• heat waves prediction and preparedness</li> <li>• public housing well-beings</li> <li>• resilience plan development</li> </ul>
Task 2.1	25 Sept 2023	Link Asset Management Ltd.	<b>LINK:</b> Calvin Kwan, Managing Director - Sustainability & Risk Governance Woody Chan, Senior Manager - Sustainability <hr/> <b>CUHK:</b> Edward Ng, Professor, School of Architecture <hr/> <b>HKU:</b> Ren Chao, Associate Dean (Research), Faculty of Architecture <hr/> <b>HKUST:</b> Christine Loh, CF Lam	Exploration on potential collaboration on application of heat map
Task 2.1	28 Sept 2023	HSBC / AXA	<b>HSBC:</b> Vivian Wong, Digital Commercialization and Engagement Manager (Health Development) <hr/> <b>AXA:</b> Chelsea Jiang, Chief Technical & Innovation Officer, General Insurance, Greater China <hr/> <b>HKUST:</b> Christine Loh	Exploration of potential collaboration on climate modelling
Task 4.1	29 Oct 2023	MTR Corporation Ltd. (MTR)	<b>MTR:</b> Jessica Chan, Head of Sustainability <hr/> <b>HKUST:</b> Karina Kuan, Rannie Xu	Experience sharing on decarbonization work and reporting
Task 2.1	1 Nov 2023	Insurance Authority (IA)	<b>IA:</b> Clement Cheung, CEO Tony Chan, Associate Director, Policy & Development Adrian Lam, Senior Manager, Policy & Development Frankie Chan, Senior Manager, Policy & Development Chan Ka Wai, Manager, Policy & Development <hr/> <b>HKUST:</b> Christine Loh, Alexis Lau, Jimmy Fung, CM Shun, Michelle Wong, CF Lam	Exploration of potential collaboration on: <ul style="list-style-type: none"> <li>• HKUST to organize data on climate hazards in accordance with the needs of insurance sector</li> <li>• HKUST to explore any collaboration with Singapore Nanyang University on climate modelling</li> <li>• IA to discuss with insurance industry on their data needs</li> </ul>

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Task No.	Date	Institutions	Attendance	Discussion Topics
Task 3	9 Nov 2023	ENVR/ Sustainability Office (SO)	<b>HKUST:</b> Marcus Leung (SO), Jimmy Fung, Alexis Lau, Tony Chung, Michelle Wong (ENVR), CF Lam (SET) <b>KINS:</b> Danny Ip, Wilson Ip, Leo Lee	Discussion on energy consumption and indoor air quality data exchange and Library retrofitting proposal
Task 3	9 Nov 2023	KPMG (HKMA's consultant)	<b>KPMG:</b> Angus Choi, Partner, ESG Advisory/ESG Data & Technology Lead <b>HKUST:</b> Christine Loh	Discussion on organizing events
Tasks 2.1 & 6(b)	9 Nov 2023	Insurance Authority (IA)	<b>IA:</b> Frankie Chan, Senior Manager, Policy & Development, et al <b>HKUST:</b> Christine Loh	Discussion on IA Summit on 8 Dec 2023
Task 3	10 Nov 2023	All Co- operation (ACP)	<b>ACP:</b> Jenny Choi, Project Director <b>HKUST:</b> Michelle Wong, CF Lam	Discussion on potential collaboration on energy efficiency enhancement and indoor air quality improvement of youth centres
Tasks 2.1 & 5	10 Nov 2023	Bank of China (BOC)	<b>BOC:</b> Lorie Yin, Vice President of Sustainability Strategy Zoe Jiang, Lau Fei, Dong Yu, ESG Strategy Team <b>HKUST:</b> Christine Loh, Jimmy Chan, Shannon Ho	Discussion on potential collaboration on: <ul style="list-style-type: none"> <li>• HKUST summer internship</li> <li>• Update for SFC/HKMA launching of carbon estimator/calculator</li> <li>• BOC Building energy consumption estimation</li> </ul>
Task 2.1	13 Nov 2023	HSBC	<b>HSBC:</b> Vivian Wong, Digital Commercialization and Engagement Manager <b>HKUST:</b> Christine Loh	Discussion on potential collaboration on climate risks
Task 3	17 Nov 2023	Sino Property Services (Sino)	<b>Sino:</b> Nelson Chiu, Associate Director (Sino Property Services) Gary Chan, General Manager (Building Services) Freddy Li, Deputy General Manager (Maintenance) Ronald Leung, Deputy General Manager Hadfield Cheung, Assistant General Manager (Environmental & Sustainability) <b>Kins Engineering Ltd:</b> Danny Ip, Wilson Ip <b>HKUST:</b> Michelle Wong, CF Lam	Visit to JTIA to explore potential collaboration on Sino property retrofit for energy efficiency enhancement and indoor air quality improvement

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Task No.	Date	Institutions	Attendance	Discussion Topics
Task 3	23 Nov 2023	Sino Property Services (Sino)	<b>Sino:</b> Nelson Chiu, Associate Director (Sino Property Services) Freddy Li, Deputy General Manager (Maintenance) Hadfield Cheung, Assistant General Manager (Environmental & Sustainability) Simon Law, Assistant General Manager (Innovation) Micheal Mui, Group Director of Engineering Samson Woo, General Manager <hr/> <b>KINS:</b> Danny Ip, Wilson Ip <hr/> <b>HKUST:</b> Michelle Wong, Tony Chung	Visit to TAL and Fullerton Hotel to explore potential collaboration on Sino property retrofit for energy efficiency enhancement and indoor air quality improvement
Task 3	28 Nov 2023	Housing Department (HD)	<b>HD:</b> Derek Lo, Chief Manager/Management Sanna Lau, Senior Building Services Engineer <hr/> <b>HKUST:</b> Grace Hui (ENVR), CF Lam	To understand the building services operation and energy enhancement measures of typical public housing estates (Tsz Ching Estate)
Task 3	29 Nov 2023	All Co-operation (ACP)	<b>ACP:</b> Jenny Choi, Project Director <hr/> <b>Kins:</b> Danny Ip, Wilson Ip <hr/> <b>HKUST:</b> CF Lam	To understand operating problem of Salvation Army Youth Centre In Tuen Mun and explore collaboration on energy efficiency enhancement and indoor air quality improvement
Task 6(b)	6 Dec 2023	Barclays Bank (BarB)	<b>BarB:</b> Eric Khor, Director, plus 2 others from bank <hr/> <b>HKUST:</b> Christine Loh	Discussion on ESG, Hong Kong role in green finance
Task 3	6 Dec 2023	Tuen Mun Yan Chai Hospital Law Chan Chor Si Primary School	<b>School:</b> Mr Cheung, Vice Principal <hr/> <b>Kins:</b> Wilson Ip <hr/> <b>HKUST:</b> Tony Chung, CF Lam	Retrofit project for energy efficiency
Tasks 3 & 6(b)	7 Dec 2023	Hong Kong Green Building Council (HKGBC)	<b>HKGBC:</b> Harry Lai, Deputy Executive Director Grace Kwok, Director Heidi Hui, Head of Marketing <hr/> <b>HKUST:</b> Christine Loh, Jimmy Chan, CF Lam	Discussion on potential collaboration on: <ul style="list-style-type: none"> <li>Building retrofit for energy efficiency enhancement and indoor air quality improvement</li> <li>Re-think Hong Kong 2024</li> </ul>

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Task No.	Date	Institutions	Attendance	Discussion Topics
Task 3	11 Dec 2023	Sino Property Services (Sino)	<b>Sino:</b> Nelson Chiu, Associate Director (Sino Property Services) Gary Chan, General Manager (Building Services) Freddy Li, Deputy General Manager (Maintenance) Ronald Leung, Deputy General Manager Leo Leung, Assistant General Manager (Maintenance) Hadfield Cheung, Assistant General Manager (Environmental & Sustainability) Simon Law, Assistant General Manager (Innovation) Vivian Lee, ESG Team Ellen Lim, PR Team <hr/> <b>KINS:</b> Danny Ip, Wilson Ip <hr/> <b>HKUST:</b> Christine Loh, Alexis Lau, Michelle Wong, Tony Chung, CF Lam	Discussion on potential collaboration on building retrofit for energy efficiency enhancement and indoor air quality improvement: <ul style="list-style-type: none"> <li>• Fullerton Hotel</li> <li>• Tai O Heritage Hotel</li> <li>• China Hong Kong City</li> <li>• Empire Centre</li> </ul>
Task 4.1	13 Dec 2023	Alliance Construction Materials Ltd. (Alliance)	<b>Alliance:</b> SK Wu, Head of ESG <hr/> <b>HKUST:</b> Karina Kuan, Rannie Xu, CF Lam	Experience sharing on decarbonization work and reporting
Task 3	15 Dec 2023	Sino Property Services (Sino)	<b>Sino:</b> Lawrence Cheng, Assistant Director of Engineering Leo Leung, Assistant General Manager (Maintenance) Karl Law, Hotel Manager <hr/> <b>Kins:</b> Danny Ip, Wilson Ip <hr/> <b>HKUST:</b> Tony Chung, CF Lam	Discussion on potential collaboration on retrofit of Tai O Heritage Hotel for energy efficiency enhancement and indoor air quality improvement
Task 3	19 Dec 2023	HKGFA	<b>HKGFA:</b> Bruce Chong, Arup Director (City Advisory, Climate & Sustainability) East Asia Felix Chan, Arup Associate Karina Chow, Arup Grace Kwok, AEC Group Chairman and Executive Director Robert Gibson, HKUST Jenny Fan, ANZ Banking Group Limited Executive Director, Head of North Asia, Sustainable Finance Carmen Lau, ANZ Banking Group Limited Carmen Chan, OCBC Bank Nigel Smith, CRECCHKI Tsun Chen, HKGFA Secretary General Jenny Lee, HKGFA Deputy Secretary General Vivian Lau, HKGFA Senior Manager Andra Chow, HKGFA Junior Associate <hr/> <b>HKUST:</b> Christine Loh, CF Lam	<b>HKGFA Real Estate WG Core Team Meeting:</b> Discussion on potential collaboration on a study for building retrofit and financing for energy efficiency enhancement and indoor air quality improvement

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Task No.	Date	Institutions	Attendance	Discussion Topics
Task 3	20 Dec 2023	Schneider Electric (Schneider)	<b>Schneider:</b> Johnathan Chiu, President Travis Kan, Director (Digital Energy & Power Products) Susan Chow, Senior Solution Engineer Shirley Wong, Head of Global Marketing Peter Mo, Head of Marketing <hr/> <b>HKUST:</b> Christine Loh, CF Lam	<ul style="list-style-type: none"> <li>Visit to Schneider Technology Demo Centre</li> <li>Discussion on potential collaboration on building retrofit for energy efficiency enhancement and indoor air quality improvement</li> </ul>
Task 3	21 Dec 2023	HK SAR Government	<b>Government:</b> <b>(Housing Bureau)</b> Victor Tai, Under Secretary for Housing Wong Chuen Fai, Commissioner for Climate Change Sandy Li, Ag. PAS for Env & Ecology (Climate Change) Karen Lee, Sr Env Protection Officer (Climate Change) 3 Miki Chan, AS for Env & Ecology (Energy) 1 <hr/> <b>(Buildings Department)</b> Lam Tsz Fung, Sr. Bldg Surveyor/Hong Kong East 2 <hr/> <b>(Electrical and Mechanical Services Department)</b> Wallace Leung, Ch Engr/Energy Efficiency B Kevin Lee, Sr Engr/Energy Efficiency A2 <hr/> <b>(Housing Department)</b> Chan Chi Ming, Sr. Bldg Services Engr/ECM <hr/> <b>(Housing Society)</b> Eddy Cheung, General Manager (Maintenance) Wilson Lee, Senior Manager (Maintenance Building Services) <hr/> <b>(Urban Renewal Authority)</b> Carolin Fong, Executive Director (Operation) <hr/> <b>HKUST:</b> Christine Loh, Alexis Lau, Jimmy Chan, CF Lam	Discussion on potential collaboration on: <ul style="list-style-type: none"> <li>building retrofit for energy efficiency enhancement and indoor air quality improvement for public sector housing</li> <li>Sharing of building and energy consumption data</li> </ul>
Task 3	21 Dec 2023	Sino Property Services (Sino)	<b>Sino:</b> Simon Law, Assistant General Manager (Innovation) <hr/> <b>(China Hong Kong City)</b> Carl Kwok, Maintenance Manager Ivan Fong, Assistant Engineer <hr/> <b>(Empire Centre)</b> Peter Tang, Maintenance Manager <hr/> <b>Kins:</b> Danny Ip, Wilson Ip <hr/> <b>HKUST:</b> Tony Chung, CF Lam	Discussion on potential collaboration on building retrofit for energy efficiency enhancement and indoor air quality improvement: <ul style="list-style-type: none"> <li>China Hong Kong City</li> <li>Empire Centre</li> </ul>

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Task No.	Date	Institutions	Attendance	Discussion Topics
Task 3	22 Dec 2023	CLP Power Hong Kong Ltd. (CLP)	<b>CLP:</b> Jim Taylor, Senior Director of Planning <hr/> <b>HKUST:</b> Christine Loh, CF Lam	Date sharing on building energy consumption.
Task 6(b)	22 Dec 2023	Securities & Futures Commission (SFC)	<b>SFC:</b> Kelvin Fung, Senior Manager, Intermediaries Supervision Winnie Tam, Senior Manager, Intermediaries Supervision Ben Chui, Intermediaries Supervision <hr/> <b>HKUST:</b> Christine Loh, Alexis Lau, Jimmy Chan, CF Lam	Discussion on development and launching of the carbon calculation and estimation tools commissioned by SFC
Task 3	27 Dec 2023	HKGBC / Allied Environmental Consultants Group (AEC)	<b>HKGBC:</b> Harry Lai, Executive Director Eddie Lau, Head of Green Labelling <hr/> <b>AEC:</b> Grace Kwok, Chairman & Executive Director Andy Lai, Senior Environmental Consultant <hr/> <b>HKUST:</b> Jimmy Chan, CF Lam	Sharing of green building a and retrofit energy consumption.
Task 2.1	29 Dec 2023	Insurance Authority (IA)	<b>IA:</b> Frankie Chan, Senior Manager (Policy and Development) Chan Ka Wai, Manager (Policy & Development) <hr/> <b>HKUST:</b> Christine Loh, CF Lam	Exploration of potential collaboration on climate risk modelling
Task 4.1	29 Dec 2023	Tony Ip Green Architects	<b>Tony Ip:</b> Tony Ip, Founder & Director of Sustainable Design <hr/> <b>HKUST:</b> Karina Kuan, Rannie Xu, CF Lam	Experience sharing on decarbonization work and reporting
Task 4.1	29 Dec 2023	Yau Lee Construction	<b>Yau Lee:</b> Chan Pang, Environmental Officer <hr/> <b>HKUST:</b> Karina Kuan, Rannie Xu, CF Lam	Experience sharing on decarbonization work and reporting
Task 6(b)	3 Jan 2024	Esquel Group (EG)	<b>EG:</b> Bessie Chong, Director (Partnership Development), Max Wong, Associate Director (Sustainability & Social Responsibility) <hr/> <b>HKUST:</b> Christine Loh, CF Lam	Discussion on development and launching of the carbon calculation and estimation tools commissioned by SFC
Task 6(b)	4 Jan 2024	Business Environment Council (BEC)	<b>BEC:</b> Simon Ng, CEO <hr/> <b>HKUST:</b> Christine Loh, CF Lam	Discussion on development and launching of the carbon calculation and estimation tools commissioned by SFC

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Task No.	Date	Institutions	Attendance	Discussion Topics
Tasks 2.1 & 6(b)	5 Jan 2024	Academy of Finance (AoF)	<b>AoF:</b> Enoch Fung, CEO Gillian Hui, COO Giorgio Valente, Head (HK Institute for Monetary and Financial Research) <hr/> <b>HKUST:</b> Christine Loh, CF Lam	Discussion on potential collaboration on research on green finance and taxonomy
Task 3	8 Jan 2024	Standard Chartered Bank (SCB)	<b>SCB:</b> Tracy Wong Harris, Head of Sustainable Finance for Greater China and North Asia <hr/> <b>HKUST:</b> Christine Loh	Discussion on potential collaboration on building retrofit and financing
Task 6(b)	8 Jan 2024	Bank of China (BOC)	<b>BOC:</b> <b>(ESG Strategy Team)</b> Lorie Yin, VP of Sustainability Strategy Zoe Jiang, VP of Sustainability Strategy  <b>(Corp Banking Team)</b> Eric Lau, Head of Strategic Coordination of Corp Banking Mary Yeung, Head of Sustainable Finance  <b>(Commercial Banking Team (in charge of SMEs))</b> Kenneth Chan <hr/> <b>HKUST:</b> Christine Loh, Jimmy Chan, Shannon Ho, CF Lam	Discussion on development and launching of the carbon calculation and estimation tools commissioned by SFC
Task 2.1	9 Jan 2024	HKU School of Public Health / Faculty of Architecture	<b>HKU:</b> David Bishai, Director of School of Public Health, HKU <hr/> <b>HKUST:</b> Christine Loh	Exploration of potential collaboration on environmental health research
Task 6(b)	10 Jan 2024	Hong Kong and China Gas Co. Ltd. (Towngas)	<b>Towngas:</b> Bien Wong, Corporate Affairs, ESG and Mainland Business Strategy Manager Kimmy Cheng, ESG Officer <hr/> <b>HKUST:</b> Shannon Ho, CF Lam	Discussion on development and launching of the carbon calculation and estimation tools commissioned by SFC
Tasks 2.1 & 6(b)	10 Jan 2024	Insurance Authority (IA)	<b>IA:</b> Clement Cheung, CEO Tony Chan, Associate Director (Policy & Legislation) Adrian Lam, Senior Manager (Policy & Development) Frankie Chan, Senior Manager (Policy & Development) Chan Ka Wai, Manager, Policy & Development <hr/> <b>HKUST:</b> Christine Loh, Alexis Lau, Jimmy Fung, Chen Fei, Jimmy Chan, CM Shun, CF Lam	Report on UST trip to Geneva visiting various climate-related organizations; and exploration of potential collaboration with insurance sector

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Task No.	Date	Institutions	Attendance	Discussion Topics
Task 6(b)	11 Jan 2024	Securities & Futures Commission (SFC)	<b>SFC:</b> Kelvin Fung, Senior Manager, Intermediaries Supervision Ben Chui, Intermediaries Supervision <hr/> <b>HKUST:</b> Christine Loh, Jimmy Chan, Shannon Ho, CF Lam	Discussion on development and launching of the carbon calculation and estimation tools commissioned by SFC
Task 4.1	12 Jan 2024	Swire Properties (Swire)	<b>Swire:</b> Patrick Ho, Head of Sustainability Development <hr/> <b>HKUST:</b> Karina Kuan, CF Lam	Experience sharing on decarbonization work and reporting
Task 6(b)	12 Jan 2024	SME Sustainability Society (SME SusSoc)	<b>SME SusSoc:</b> Ophelia Lin, ex-Chairlady and its members <hr/> <b>HKUST:</b> CF Lam	SME Sustainability Forum: Introduction of carbon calculation and estimation tools
Task 6(b)	15 Jan 2024	Small-to-Medium Enterprises (SMEs)	<b>SMEs:</b> 67 companies <hr/> <b>SFC:</b> Kelvin Fung, Senior Manager, Intermediaries Supervision Ben Chui, Intermediaries Supervision <hr/> <b>HKUST:</b> Christine Loh, Alexis Lau, Jimmy Chan, Shannon Ho, CF Lam	Demonstration for the carbon calculation and estimation tools commissioned by SFC
Task 6(b)	16 Jan 2024	Small-to-Medium Enterprises (SMEs)	<b>SMEs:</b> 51 companies <hr/> <b>SFC:</b> Kelvin Fung, Senior Manager, Intermediaries Supervision Ben Chui, Intermediaries Supervision <hr/> <b>HKUST:</b> Christine Loh, Alexis Lau, Jimmy Chan, Shannon Ho, CF Lam	Demonstration for the carbon calculation and estimation tools commissioned by SFC
Task 3	19 Jan 2024	Sino Property Services (Sino)	<b>Sino:</b> Leo Leung, Assistant General Manager (Maintenance) Freddy Li, Deputy General Manager (Maintenance) Hadfield Cheung, Assistant General Manager (Environmental & Sustainability) Michael Mui, Matt Lo, Peter Tang <hr/> <b>Kins:</b> Danny Ip, Wilson Ip <hr/> <b>HKUST:</b> Tony Chung, CF Lam	Discussion on monitoring and retrofitting work for: <ul style="list-style-type: none"> <li>• Fullerton Hotel, Tai O Heritage Hotel (top priority)</li> <li>• China Hong Kong City, Empire Centre</li> </ul>

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Task No.	Date	Institutions	Attendance	Discussion Topics
Tasks 2.1 & 6(b)	19 Jan 2024	Insurance Authority (IA) / Hong Kong Federation of Insurers (HKFI)	<b>IA:</b> Frankie Chan, Senior Manager (Policy & Development) Chan Ka Wai, Manager, Policy & Development <hr/> <b>HKFI:</b> Maggie Leung, Deputy General Manager Jasmine Kwong, Manager <hr/> <b>HKUST:</b> Christine Loh, CF Lam	<ul style="list-style-type: none"> <li>Discussion on collaboration for the launching ceremony of Climate Charter of Insurance Industry</li> <li>Exploration of potential collaboration with insurance sector</li> </ul>
Task 4.1	19 Jan 2024	Arup	<b>Arup:</b> Goman Ho, Director & Arup Fellow Tim Wong, Senior Engineer <hr/> <b>HKUST:</b> Karina Kuan, CF Lam	Experience sharing on decarbonization work and reporting
Tasks 2.1 & 6(b)	22 Jan 2024	Peak Re Reinsurance Co. (Peak Re)	<b>Peak Re:</b> Iain Reynolds, Head of Catastrophe Analytics and Research Luxi Zhou, Vice President & Meteorologist Zoe Wan, Chief of Staff <hr/> <b>HKUST:</b> Alexis Lau, Jimmy Fung, Shih Xiao Ming, CF Lam	<ul style="list-style-type: none"> <li>Exchange on UST climate research capabilities and Peak Re business scope</li> <li>Exploration of potential collaboration</li> </ul>
Task 4.1	23 Jan 2024	Arup	<b>Arup:</b> Tim Wong, Senior Engineer <hr/> <b>HKUST:</b> Karina Kuan, CF Lam	Experience sharing on decarbonization work and reporting
Task 6(b)	24 Jan 2024	Securities & Futures Commission (SFC)	<b>SFC:</b> Kelvin Fung, Senior Manager, Intermediaries Supervision Ben Chui, Intermediaries Supervision <hr/> <b>HKUST:</b> Christine Loh, Jimmy Chan, Shannon Ho, CF Lam	Discussion on development and launching of the carbon calculation and estimation tools commissioned by SFC
Task 3	3 Feb 2024	Hong Kong Clean Air Network (CAN)	<b>CAN:</b> Patrick Fung, Chief Executive Officer Melville Peter Pradhan, Project Manager <b>HKUST:</b> CF Lam	<b>Clean Air for Schools and Beyond" Forum:</b> Discussion on follow-up of retrofitting project for a primary school in Tuen Mun
Task 6(b)	6 Feb 2024	FSTB	<b>FSTB:</b> Salina Yan, Permanent Secretary Almaz Leung, Principal Assistant Secretary Noel Tsang, Assistant Secretary <hr/> <b>SFC:</b> Kelvin Fung, Associate Director Winnie Tam, Senior Manager Ben Chui, Assistant Manager (Intermediaries Supervision) Samuel Kwan, Assistant Manager (International Affairs & Sustainable Finance) <hr/> <b>HKUST:</b> Christine Loh, Alexis Lau, Jimmy Chan, Shannon Ho	Demo of the carbon calculation and estimation tools commissioned by SFC

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Task No.	Date	Institutions	Attendance	Discussion Topics
Task 3	19 Feb 2024	HKGBC / HKGFA / ReThink	<b>HKGBC:</b> Harry Lai, CEO Heidi Hui, Manager <hr/> <b>HKGFA:</b> Tso Chun, CEO Jenny Lee, Manager <hr/> <b>HKUST:</b> Christine Loh, Shannon Ho	Discussion on the collaboration in ReThink 2024 to showcase the 3D building energy visualization tool being developed by HKUST
Task 6(b)	20 Feb 2024	One Earth Summit (OES)	<b>OES:</b> Wayne Li, Manager <hr/> <b>HKUST:</b> Christine Loh	Discussion on the collaboration in One Earth Summit 2024 to showcase the carbon calculation and estimation tools
Task 6(b)	20 Feb 2024	Securities & Futures Commission (SFC)	<b>SFC:</b> Kelvin Fung, Senior Manager, Intermediaries Supervision Ben Chui, Intermediaries Supervision <hr/> <b>HKUST:</b> Christine Loh, Jimmy Chan, Shannon Ho, CF Lam	Discussion on development and launching of the carbon
Tasks 2.1 & 3	20 Feb 2024	Insurance Authority (IA) / Hong Kong Federation of Insurers (HKFI)	<b>IA:</b> Tony Chan, Associate Director (Policy & Legislation) Frankie Chan, Senior Manager (Policy & Legislation) Chan Ka Wai, Manager (Policy & Legislation)  <b>(Insures)</b> Chelsea Jiang, Chief Technical and Innovation Officer, General Insurance, AXA Greater China Nicole Siu, Assistant Manager, Strategy and Innovation, General Insurance, AXA Hong Kong Kenneth Lai, Chief General Insurance Officer, AXA Hong Kong and Macau (Subgroup Convenor of HKFI Task Force on Green Insurance) Iain Reynolds, Head of Catastrophe Analytics and Research, Peak Reinsurance Luxi Zhou, Meteorologist, Peak Reinsurance Ye Liu, CAT Risk Manager, SCOR Reinsurance Asia Charles Ng, APAC Pricing Manager, SCOR Reinsurance Asia Hang Yin, Deputy General Manager, Taiping Reinsurance Michael Fung, Head of Risk Analytics, Taiping Reinsurance Clement Hau, Chief Underwriting Officer, Zurich Insurance Hong Kong (Chair of Fire Insurance Association, HKFI) <hr/> <b>HKFI:</b> Maggie Leung, Deputy General Manager (Communications and Committee) Jasmine Kwong, Manager (Communications and Committee) <hr/> <b>HKUST:</b> Christine Loh, Alexis Lau, Jimmy Fung, Chen Fei, Jimmy Chan, CF Lam	Experience sharing on decarbonization work and reporting

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Task No.	Date	Institutions	Attendance	Discussion Topics
Task 3	21 Feb 2024	Schneider Electric (Schneider)	<b>Schneider:</b> J-P Tricoire, Chairman of Schneider Global Jonathan Chiu, President of Schneider HK <hr/> <b>HKUST:</b> Christine Loh	Discussion on potential collaboration on building retrofit for energy efficiency enhancement and indoor air quality improvement
Task 2.1	22 Feb 2024	HSBC	<b>HSBC:</b> Ian Drew, Regional Head of Risk Strategy for Asia Pacific <hr/> <b>HKUST:</b> Christine Loh	Discussion on potential collaboration on climate risk modelling
Tasks 2.1, 3 & 6	22 Feb 2024	BOC	<b>BOC:</b> Kang Qu, Managing Director, Sustainability Strategy Lorie Yin, Vice President of Sustainability Strategy <hr/> <b>HKUST:</b> Christine Loh	Preparation for event on 28.2.2024
Task 4.1	24 Feb 2024	Chun Wo Construction Holdings Co. Ltd. (Chun Wo)	<b>Chun Wo:</b> Winnie Ma, Assistant Environmental Manager <hr/> <b>HKUST:</b> Karina Kuan	Experience sharing on decarbonization work and reporting
Tasks 2 & 6(b)	4 Mar 2024	Peak Re Reinsurance Co. (Peak Re)	<b>Peak Re:</b> Franz-Hahn, Chief Executive Officer Iain Reynolds, Head of Catastrophe Analytics and Research Luxi Zhou, Vice President & Meteorologist Zoe Wan, Chief of Staff <hr/> <b>HKUST:</b> Alexis Lau, Chen Fei, Shih Xiao Ming, CF Lam	<ul style="list-style-type: none"> <li>Exchange on UST climate research capabilities and Peak Re business scope</li> <li>Exploration of potential collaboration</li> </ul>
Task 2.1	4 Mar 2024	Insurance Authority (IA) / World Bank (WB)	<b>WB:</b> Michael Bennett, Head of Derivatives and Structured Finance (Capital Markets) Gianfranco Bertozzi, Lead Financial Officer (Structured Finance, Capital Markets & Investments) Naomi Cooney, Senior Financial Officer (Market Solutions and Structured Finance, Capital Markets and Investments) <hr/> <b>IA:</b> Ocean Chiu, Senior Manager (General Business) Gloria Chan, Senior Manager (Market Development) Frankie Chan, Senior Manager (Policy & Development) Chan Ka Wai, Manager, Policy & Development <hr/> <b>HKUST:</b> Christine Loh, Alexis Lau, Chen Fei, CM Shun, CF Lam	Exploration of potential collaboration

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Task No.	Date	Institutions	Attendance	Discussion Topics
Task 6(b)	7 Mar 2024	GOIMPACT (GI)	<b>GOIMPACT:</b> Helene Li, Co-founder & Chief Executive Officer <hr/> <b>HKUST:</b> Christine Loh	Introduction of the carbon calculation and estimation tools commissioned by SFC
Tasks 2.1, 3 & 6(b)	7 Mar 2024	Chinachem Group (Chinachem)	<b>Chinachem:</b> Raymond Fok, Director (CEO Office) Raymond Kwok, General Manager (Environmental Science) Samuel Kwong, Senior Associate Director (ESG) Eric To, Senior Manager (PropTech) Sam Lok, Alex Wong <hr/> <b>HKUST:</b> Alexis Lau, CF Lam	<ul style="list-style-type: none"> <li>Exchange on UST climate research capabilities and Chinachem relevant business scope</li> <li>Exploration of potential collaboration</li> </ul>
Task 6(b)	14 Mar 2024	BIS Hub	<b>BIS Hub:</b> Benedicte Nolens, Teresa Lin <hr/> <b>HKUST:</b> Christine Loh, Jimmy Chan, Shannon Ho, CF Lam	Introduction of the carbon calculation and estimation tools commissioned by SFC
Task 6(b)	20 Mar 2024	GOIMPACT (GI)	<b>GOIMPACT:</b> Helene Li, Co-founder & Chief Executive Officer <hr/> <b>HKUST:</b> Christine Loh	Introduction of the carbon calculation and estimation tools commissioned by SFC
Tasks 2.1, 3 & 6(b)	21 Mar 2024	Hong Kong Clean Air Network (HK CAN)	<b>CAN:</b> Patrick Fung, CEO <hr/> <b>HKUST:</b> Christine Loh, Alexis Lau, CF Lam	<ul style="list-style-type: none"> <li>Exchange on UST climate research capabilities and CAN scope of work</li> <li>Exploration of potential collaboration</li> </ul>
Task 3	21 Mar 2024	Development Bureau (DevB)	<b>DevB:</b> Chester Chan, Architect (Heritage Conservation) WK Lau, Project Manager (Heritage Conservation) <hr/> <b>JTIA:</b> Kiki Ko, Chief Executive Officer Ben Leung, Facilities Manager Henry Lai, Engineer <hr/> <b>Kins:</b> Danny Ip, Wilson Ip <hr/> <b>HKUST:</b> Tony Chung, CF Lam	<ul style="list-style-type: none"> <li>Visit to the pilot retrofit project of JTIA</li> <li>Exploration of potential collaboration</li> </ul>
Task 3	16 Apr 2024	Chinachem Group (Chinachem)	<b>Chinachem</b> <hr/> <b>Kins:</b> Danny Ip, Wilson Ip <hr/> <b>HKUST:</b> Tony Chung, CF Lam	Exploration of potential collaboration on pilot retrofit projects: <ul style="list-style-type: none"> <li>Chinachem Tower (Central)</li> <li>Hilton Plaza (Shatin)</li> </ul>

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

Task No.	Date	Institutions	Attendance	Discussion Topics
Task 4.1	17 Apr 2024	Construction Industry Council (CIC)	<b>CIC:</b> Ivan Chiu, Manager (Industry Development) Laraine Chau, Assistant Manager Ray Chan, Senior Officer (Environmental & Sustainability) <b>HKUST:</b> Jimmy Chan, Shannon Ho, Karina Kuan, CF Lam	Experience sharing on carbon assessment tool development and applications
Task 6	22 Apr 2024	GOIMPACT (GI)	<b>GOIMPACT:</b> Helene Li, Co-founder & Chief Executive Officer <b>HKUST:</b> Christine Loh	Discussion on the organization of the GreenTech Summit on 30 & 31 Oct 2024
Tasks 3 & 6(b)	24 Apr 2024	HKGFA	<b>HKGFA:</b> Sally Wong, Alexander Chan, Co-Chairs and WG Members <b>HKUST:</b> Christine Loh, CF Lam	<b>HKGFA Real Estate WG Core Team Meeting:</b> <ul style="list-style-type: none"> <li>Progress updates on the Green Retrofitting Research Project</li> <li>Demo on UST 3D Building Energy Visualization Tool</li> </ul>
Task 6(b)	25 Apr 2024	Hong Kong Logistics Association (HKLA)	<b>HKLA:</b> Elsa Yuen, Chairlady Alvin Au, Hong Shing Supply Chain Co. Gary Lau, Hong Kong Association of Freight Forwarding and Logistics Ltd. Jason Tai, Atarashi Management Co. Ltd. Andy Heung, Yamato Logistics HK <b>HKUST:</b> CF Lam	<b>Launching Ceremony cum Experience Sharing:</b> Introduction of carbon calculation and estimation tools
Tasks 2.1 & 6(b)	26 Apr 2024	BSAP Committee	<b>BSAP:</b> Andy Cornish <b>HKUST:</b> Jimmy Fung, CF Lam	Discussion on collaboration for organizing a BSAP Workshop on 20 June 2024
Task 6(b)	26 Apr 2024	InnoBlock Technology Ltd.	<b>InnoBlock:</b> Kevin Ng, Chief Executive Officer Rowena Wong, Head of Sales & Marketing <b>HKUST:</b> Jimmy Chan, CF Lam	Discussion on potential collaboration on enhancement of the carbon calculation and estimation tools developed for SFC
Task 3	3 May 2024	Keysen Property Management Services Ltd. (Great Eagle Holdings Ltd.)	<b>Keysen:</b> Tim Chu, Director and General Manager Tony Lee, Energy Manager Henry Chan, Director of Projects <b>Kins:</b> Danny Ip, Wilson Ip <b>HKUST:</b> Grace Hui, Tony Chung, CF Lam	Exploration of potential collaboration on pilot project for commercial building with application of carbon credit

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

Task No.	Date	Institutions	Attendance	Discussion Topics
Task 6(b)	7 May 2024	GOIMPACT (GI)	<b>GOIMPACT:</b> Helene Li, Co-founder & Chief Executive Officer Clarence Tso, Melody To, Winky Tse, Kamile Chu, Leanne Chiang <hr/> <b>HKUST:</b> Christy Yeung (SBM), CF Lam	Discussion on the organization of the GreenTech Summit on 30 & 31 Oct 2024
Task 6(b)	8 May 2024	Asian Development Bank (ADB)	<b>ADB:</b> Phoebe Wu <hr/> <b>HKUST:</b> Christine Loh, Jimmy Chan, CF Lam	Discussion on the preparation for the workshop to showcase the carbon calculation and estimation tools developed for SFC on 23 May 2024
Task 2.1	13 May 2024	Insurance Authority (IA)	<b>IA:</b> Clement Cheung, CEO Tony Chan, Associate Director, Policy & Development Frankie Chan, Senior Manager, Policy & Development Chan Ka Wai, Manager, Policy & Development <hr/> <b>HKUST:</b> Christine Loh, Alexis Lau, Jimmy Fung, Chen Fei, CM Shun, CF Lam	<ul style="list-style-type: none"> <li>• HKUST update on Singapore Visit</li> <li>• HKUST update on visit to the Global Asia Insurance Partnership (GAIP)</li> <li>• IA proposal on potential collaboration with the insurance industry and regular meeting with HKUST</li> </ul>
Task 6(b)	14 May 2024	InnoBlock Technology Ltd.	<b>InnoBlock:</b> Kevin Ng, Chief Executive Officer Rowena Wong, Head of Sales & Marketing <hr/> <b>HKUST:</b> Jimmy Chan, CF Lam	Discussion on potential collaboration on enhancement of the carbon calculation and estimation tools developed for SFC
Task 3	14 May 2024	Standard Chartered Bank (SCB)	<b>SCB:</b> Tracy Wong Harris, Head of Sustainable Finance for Greater China and North Asia <hr/> <b>HKUST:</b> Christine Loh, CF Lam	Discussion on potential collaboration on building retrofit and financing
Task 6(b)	16 May 2024	Impax Asset Management	<b>Impax:</b> Nana Li, Head of Sustainability & Stewardship, Asia Pacific <hr/> <b>HKUST:</b> Christine Loh, Alicia Shen (intern)	Discussion on potential collaboration on green finance
Task 6(b)	23 May 2024	Asian Development Bank (ADB)	<b>ADB:</b> Phoebe Wu, Financial Sector Specialist ADB Members <hr/> <b>HKUST:</b> Christine Loh, Jimmy Chan, CF Lam	<b>ADB Webinar on Innovative Technology and GHG Emissions Calculation:</b> Showcase of the carbon calculation and estimation tools developed for SFC
Task 6(b)	27 May 2024	Moody's Investors Service (Moody's)	<b>Moody's:</b> John Wang, Vice President & Senior Analyst Natasha Brereton-Fukui, SVP Global ESG Research <hr/> <b>HKUST:</b> Christine Loh	Discussion on event on 19 June 2024

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

Task No.	Date	Institutions	Attendance	Discussion Topics
Tasks 3 & 6(b)	17 Jun 2024	IXO Decarbonization Engineering & Advisory (IXO)	<b>IXO:</b> Lizette McNeill, Managing Partner (Facades) Vimal Karpe, Managing Partner (Structures) <hr/> <b>HKUST:</b> Christine Loh, Alexis Lau, Jimmy Chan, Walter Wang, CF Lam	Exploration of potential collaboration on: <ul style="list-style-type: none"> <li>3D Building Energy Visualization Tool</li> <li>ReThink 2024</li> </ul>
Task 4.1	18 Jun 2024	Construction Industry Council (CIC)	<b>CIC:</b> Margaret Ho, Senior Manager Max Chin, Environment & Sustainability Manager Ivan Chiu, Manager (Industry Development) Laraine Chau, Assistant Manager Ray Chan, Senior Officer (Environmental & Sustainability) <hr/> <b>HKUST:</b> Karina Kuan, CF Lam	Experience sharing on carbon assessment tool development and applications
Task 3	25 Jun 2024	Sino Property Services (Sino)	<b>Sino:</b> Lawrence Cheng, Assistant Director of Engineering Leo Leung, Assistant General Manager (Maintenance) Karl Law, Hotel Manager <hr/> <b>Kins:</b> Danny Ip, Wilson Ip <hr/> <b>HKUST:</b> Tony Chung, CF Lam	Discussion on remeasurement after retrofit of Tai O Heritage Hotel for energy efficiency enhancement and indoor air quality improvement

## 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
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

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	Attendance	Event	Organizer	Format	TBR Task No.
15.07.2023	Christine Loh	CPA Congress: Panelist on ESG	Hong Kong Institute of Certified Public Accountants	Conference	Tasks 3, 5 & 6
22.07.2023	Christine Loh	HKUST BSM Investing Club: Keynote on Sustainability and ESG	HKUST BSM Investing Club	Seminar	Task 6(b)
14-15.09.2023	Christine Loh	ReThink Hong Kong 2023: Sustainable Business Forum & Solutions Expo	ReThink / Business Environment Council	Forum and Expo	Tasks 2.1, 3 and 6(a)
04.10.2023	Christine Loh/ CF Lam	HKGFA Annual Forum 2023	Hong Kong Green Finance Association (HKGFA)	Conference	Tasks 2.1 & 6(b)
16.10.2023	Christine Loh/ CF Lam	Innovation Summit Hong Kong 2023	Schneider Electric	Conference	Task 3
21.11.2023	Christine Loh/ CF Lam	Seminar on Navigating Unpredictable Rains and Floods: Useful Stress Tests for Hong Kong	Institute for the Environment, HKUST	Seminar	Tasks 2.1 & 6(b)
8.12.2023	Christine Loh/ CF Lam	Insurance Summit	Insurance Authority	Conference	Tasks 2.1 & 6(b)
01.02.2024	Christine Loh	BOC Forum: Strengthen Hong Kong's Role on the Chinese Mainland's Sustainable Finance Landscape	Bank of China (BOC)	Forum	Tasks 2 & 6(b)
21.02.2024	Christine Loh/ CF Lam	Launching of Carbon Calculator/Estimator	SFC / HKMA / HKEX	Launching cum press conference and experience sharing	Task 6(b)
26.02.2024	Christine Loh	HKMA Hong Kong Green Week: Green Tech Day	Green Development Institute	Conference	Task 6(b)
28.02.2024	Christine Loh	HKMA Hong Kong Green Week: Discussion Forum on Sustainable Finance	Bank of China	Seminar	Task 6(b)
29.02.2023	Christine Loh/ CF Lam	HKMA Hong Kong Green Week: Seminar on Financing the Net-Zero Transition	HKMA / IFFO-GFANZ	Seminar	Tasks 6(a) & 6(b)
29.02.2023	Christine Loh/ Keith Chan/ CF Lam	HKMA Hong Kong Green Week: Seminar on Taxonomy for Hong Kong	HKMA / HKUST / HKGFA	Seminar	Tasks 6(a) & 6(b)
25.03.2024	Christine Loh	One Earth Summit	Institute of Sustainability and Technology	Conference	Task 6(b)
27.03.2024	Christine Loh	Red Cross's Resilience Forum: Creating a Resilient Community	Red Cross Hong Kong	Forum	Task 2.1 and 6(b)
09.04.2024	Christine Loh	Global Investment Summit	HSBC	Conference	Task 6(b)
12.04.2024	Christine Loh/ CF Lam	Reaching New Heights of Sustainable Buildings: Why It Makes Sense for Business & What Lies Ahead	GBA Carbon Neutrality Association	Conference	Task 3
23.04.2024	Christine Loh	Interview on Carbon Calculator/Estimator	Yahoo	Interview	Task 6(b)
21.05.2024	Christine Loh	Green Building Event	Consulate of Netherlands	Seminar	Task 3
22.05.2024	Christine Loh/ CF Lam	Briefing on 3D Building Energy Efficiency Visualization Tool	Institute for the Environment, HKUST	Briefing and demonstration	Task 3

**V: RECORD OF RELEVANT EVENTS**

Date	Attendance	Event	Organizer	Format	TBR Task No.
23.05.2024	Christine Loh	Hong Kong GreenTech Challenges – The Green Buildings Edition	Carbonless / HKSPT	Workshop	Task 3
03.06.2024	CF Lam	7th International Symposium on Regional Air Quality Management (7RAQM) Hong Kong Forum	Institute for the Environment, HKUST	Forum	Task 2.1
04.06.2024	Christine Loh	Green Building Event	HKGBC	Seminar	Tasks 3 & 6(b)
12-14.06.2024	Christine Loh	World Sustainable Built Environment Conference	CIC / HKGBC	Conference	Tasks 3 & 6(b)
19.06.2024	Christine Loh	Moody's GreenTech & Innovation Summit	Moody's	Live Event Online	Task 6(b)
20.06.2024	Christine Loh/ Jimmy Fung/ CF Lam	Biodiversity Strategy Action Plan (BSAP) – Future Climate and Adaptation Workshop	BSAP Steering Committee	Workshop	Task 2.1 & 6(b)

