August 31, 2009

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To whom it may concern,

This letter is written in response to the Consultation Paper on HKEX's consideration in the establishment of Certified Emission Reduction ("CER") futures, related products and trading. The conclusion is that although the market will initially be limited in volume, the potential growth in the size of the market, and Hong Kong's established characteristics as a global financial center, and its proximity to offsets generations, among others, warrant the establishment of offsets futures trading.

Consultation Questions:

1. *The first commitment period of the Kyoto Protocol will expire in 2012. The continuity of CERs as recognized carbon emission offsetting credits under the Kyoto Protocol is subject to a new international framework for the second commitment period under negotiation with a target completion in the United Nations Climate Change Conference in Copenhagen in December this year. Meanwhile, the US appears to be committed to develop a US emission trading scheme, but the details of the scheme are subject to further announcement and the relevance of CERs is uncertain. Against this background, do you think CERs should be the core carbon emission product to pursue in Hong Kong now or in a few years' time?*

CERs or its succeeding emission offset credits would be the foundation on which HKEX builds its presence in the environmental and related commodities market. CERs should become the core greenhouse gas emission product pursued for the following reasons:

i. its key role in cap-and-trade markets ("markets");
ii. the market for offsets to grow with the overall emission market;
iii. the increased liquidity as the market grows

i. Offsets' key role in cap-and-trade markets ("markets")

Of the two main instruments in the market – emission allowances and emission offsets – offsets are especially important as a cost containment mechanism, an emission mitigation measure, and its applicability in multiple markets. Hence, its use will continue to expand as cap-and-trade markets proliferate.

On cost containment, offsets help to reduce an equivalent amount of emission but at a different location in a different sector. It is worthy to briefly explain the differences between an allowance and an offset, as well as how offsets lower cost. Emission *allowances* confer the right for a designated source, such as a power plant, to emit greenhouse gas emission, so it directly impacts how much a source can emit. If a power plant is authorized to emit 8 units of greenhouse gas but it emits 10 units, then it has to purchase 2 units of emission allowances to cover the excess emission. Emission *offsets* concern the reduction of emission in specific authorized sectors elsewhere, where the reduction would be equivalent to the direct emission reduction from the designated source. Using the example above, the certification that a reduction of 2 units of greenhouse gas emission in, say, China due to the low cost implementation of an authorized emission reduction project could be purchased by the power plant to cover the excess 2 units of emissions. Since greenhouse gas disperses in the atmosphere, a unit of greenhouse gas emitted in one location is about the same as if that unit is emitted elsewhere. Therefore, a less costly way of reducing emission is to look for a more economical sector and location for reduction, leading to the cost containment result. Nevertheless, cap-and-trade programs would not allow all reduction to be achieved in such manner, as it appears to require no real effort to reduce domestic emission. As the cap-and-trade market expands, so will the offset market.

On being an emission mitigation measure, aside from what is described above, that an offset can result from a number of technologies, sectors and locations help to increase it supply and encourage further emission reduction, given the ability to monetize the reduction itself. (But the additionality principle, where the reduction should be above and beyond what would already be happening, would apply.) Reduced deforestation and degradation (REDD) projects are also gaining acceptance, particularly in the U.S. climate legislation due to its low cost of implementation, even though the European Union is not in favor of such. The potential inclusion of these REDD projects also help to ramp-up the supply pipeline of offsets and increase liquidity.

On offsets' applicability to multiple markets, the standardization of offset specifications enhances its wide-spread use. In the current system, these offsets are already accepted in the EU ETS and the Japanese market. Other markets to join in the future, despite the likely possibility of having

very different emission reduction policies, would also incorporate this standardization of emission reduction product as a principal element in the overall legislation. Standardization increases the certainty of acceptance by offset purchasers, incentivizes offsets producers to pursue such implementations, and enhances cost effectiveness. It is akin to the gasoline market in the U.S., where different state-wide requirements in the blend of gasoline, especially in California, raise prices, but a standardized product keeps prices in check. Hence, this standardization helps to increase the market size and improves its liquidity in a global network of markets.

ii. The market for offsets to grow with the overall emission market

Concerning the market size, although it is currently only used widely in a couple of markets, primarily EU ETS, the entrance of other markets, such as the U.S. and its low cost attributes would help to increase its currency.

Currently, only 1.6 billion tons of already registered CER is forecast to be generated by 2012, as the size is limited by regulatory ramp-up, limited number of greenhouse gas emission markets with tight carbon-equivalent constraints, and the anticipation of a successor protocol beyond Kyoto. Yet, the market is certainly growing outside of this backlog. According to the International Emission Trading Association, carbon emission trade volume in 2008 reached $110 billion, compared with $11 billion in 2005 and $70 billion in 2007.

Nevertheless, the market's potential lies in the entrance of other markets and tightening of emission standards. In the U.S., an analysis prepared by the Environmental Protection Agency[1] points out that a U.S. domestic cap-and-trade program would come to rely on foreign emission offsets, as the supply of domestic offset would fall short of demand. The analysis indicated that emission allowance price would increase by 89% relative to the core policy scenario if international offsets were completely excluded. (The core scenario is the provisions contained in the bill H.R. 2454 – The American Clean Energy and Security Act – as passed in the U.S. House of Representatives.) Even with a limit on the usage of international offsets, where the share of domestic U.S. generated offsets and international offsets are split 50:50, the usage would average over 1 billion tons of CO_2-equivalent each year in the U.S. market.[2] Domestic U.S. offsets could also enter the offset market once certified by the UN, but it would enter

[1] The Environmental Protection Agency, or the EPA, is the principal department in the U.S. Federal government responsible for emissions-related issues.
[2] EPA Analysis of the American Clean Energy and Security Act of 2009 H.R. 2454 http://www.epa.gov/climatechange/economics/pdfs/HR2454_Analysis.pdf

through the current JI regime, instead of CDM. Markets in other countries would have similar considerations as the U.S., making offsets key instruments in their own emission markets.

iii. Increased liquidity as the market grows:

The wider acceptance of offsets as an instrument in emission markets, and its emerging role as an alternative asset class, are factors behind an improvement in liquidity. A greater demand as more markets adopt its use leading to a greater supply of offsets in response to the higher demand enhances liquidity.

But its derived value and varying correlations with other instruments in the financial market and commodities would position offsets, and emission allowances in general, as valuable tools for diversification and investment. The value of an offset is derived from a variety of factors: the marginal cost of overall emission abatement, the marginal cost of offset generation, the spread (or difference in value) with emission allowances (as in the case of EUA and CER in EU ETS), energy-demand as dictated by economic and weather conditions, as well as the different prices of underlying energy commodities, such as coal and gas in electricity generation that make emission prices determinants in the consideration of coal-gas fuel-switching. For example, a hedge against rising coal prices, given the different grades and location of coal, such as API2, Newcastle, NYMEX coal and others, could involve the use of instruments that include emission offsets.

Further, the focus on offsets should be broadened to other emission related financial products relevant to the emission market to improve transaction volume. Trading and hedging strategies often involves multiple instruments, such as the aforementioned spreads between emission allowance prices and offset prices, time spreads of the same commodity, commodity and offset prices, and the hedging of energy and emission costs.

2. *At this stage, the global CER market is dominated by European participants connected to the EU ETS and the delivery of CERs is based on the EU standard. Mainland China is the major supplier of CERs, which focuses on clean development projects and CER origination. Under Mainland China's policy, CERs are usually engaged by foreign investors based on forward sale agreements before they are issued by the United Nations. As such, the secondary CER trading market is not developed. European participants are using CER markets in Europe to manage their carbon emission trading needs and risk exposure. Under the existing market conditions, in what way can Hong Kong add value to the business*

process of the CER market and attract carbon emission trading participants to the Hong Kong marketplace? What are the success factors for Hong Kong to develop a commercially viable CER trading platform that can attract trading activities and develop trading liquidity? Do you think Hong Kong possesses the success factors? Please explain your view.

Hong Kong creates value in this market with its location and expertise in the associated industries. The international nature of carbon legislation would make cap-and-trade markets a truly global market.

Key success factors can be categorized into three groups:

i. Market-intrinsic;
ii. Location-specific; and
iii. Price-Discovery and Liquidity-Enhancing.

i. Market-intrinsic factors are detailed in the answer to question 1.

ii. Location-specific:

Two exchanges currently dominate the trading of energy commodities – the New York Mercantile Exchange and Intercontinental Exchange – with Japan's Tokyo Commodity Exchange and Central Japan Commodity Exchange following.[3] Yet, CERs are mostly created in East and Southeast Asia, as well as South America, where China, India, Korea and Brazil accounting for 92% of currently issued credits.[4] The proximity to the source enables a more efficient validation and certification process, and helps to bring certified credits online.

Although offsets would be considered a commodity, its existence as a certification of emission reduction does not require it to have physical delivery sites, unlike other commodities. Hence, establishing an offsets futures market in Hong Kong would not be constrained by size of its territory.

Spearheading the creation and operating an offsets future market also fit in with three of the six key areas of development identified by Hong Kong Government's Task Force on Economic Challenges.[5] Having the support of the local government is a definite plus. First, the "Environmental

[3] CRB Yearbook
[4] UNFCCC
[5] "Summary of the Focus Group Discussions on the Six Economic Areas identified by the Task Force on Economic Challenges" http://www.fso.gov.hk/tfec/eng/doc/Summary%20focus%20groups%20_TFEC-INFO-12_%20_Eng_.pdf

Industry" area in providing services to Mainland clients certainly encompasses the goal set forth by the offsets futures market. Second, "Testing and Certification" is also an area of focus, where the trust that Mainland clients have on Hong Kong's expertise and reputation establishes the City as the location for certification services. Although Hong Kong at present does not have an extensive presence in emission offset specific certifications, Hong Kong's long standing reputation, rigor and expertise in the area of certification would become a foundation for Hong Kong to build on the industry. This industry is crucial in supporting the pipeline of offset projects and in gaining project approvals. Third, the "Innovation and Technology" area includes both financial innovations and technological innovations. Offsets as a major emission trading product would usher in a new market that Hong Kong's financial sector could diversify into. The proximity to offsets generation locations would also serve as an incubator of innovative technology for more sophisticated offsets generations.

The resolution passed by the Standing Committee of the National People's Congress of China on August 27, 2009, stating its commitment to cut emissions and improve energy efficiency, is also a positive push in China's embrace of emission reduction. Its stance would be key in future international climate talks.[6]

iii. Price-Discovery and Liquidity-Enhancing factors:

Currently there is no secondary market for CERs produced in China, as offset credits generated must have offtake channels before they are approved by the Designated National Agency (DNA). But both a primary and secondary markets could be developed when a liquid emission offset market is established, where the listing and price discovery process would allow offset generators to gauge market potential before bringing offset projects online. Originators of offset projects could also bring these projects to the market through the exchange. The situation is akin to electricity generation, where its cost of construction or operation could be financed by Power Purchase Agreement that pre-buys electricity generated by the plant for an extended period of time, or sell forward in the energy or capacity markets. In addition, the three primary ways of offset investments require large amounts of capital. As such, an exchange with established futures would allow producers to hedge forward production, or players with a smaller capital base to participate in the market.

At present, the three primary ways of investment in offsets include (a) investment fund by separate accounts; (b) investment fund by joint

[6] PointCarbon, "China Passes Climate Change Resolution." http://www.pointcarbon.com/news/1.1201550

accounts; and (c) forward purchase of credits with prior agreements. An example of (a) includes the managed accounts by certain fund managers with a single investor. An example of (b) includes the World Bank Funds. Examples of (c) include various projects originated by financial institutions that are subsequently sold to compliance players or investors.

The option in (c) is akin to having multiple dealers of pre-packaged products, which are sold by the originators themselves. Exchanges would be able to provide a platform, with standardized products, for more efficient allocation of capital through the increased access for parties along the credit generation and acquisition value chain, and improve the liquidity and price discovery of this market.

The potential imposition of position limits across commodity markets, as suggested by the CFTC in the U.S., would drive a growing number of transactions into OTC markets, or that positions would have to be spread across exchanges. Even though Asia is still developing a vibrant commodity trading environment despite its fast growing consumption of commodities, the locational shift of commodity demand, the gradual maturation of the financial sector in Asia, particularly in commodities trading, and the need for a more global, timezone transcending trading environment put Asia into a prime position for the establishment of another major commodity exchange.

3. *Do you consider Hong Kong investing communities have sufficient knowledge in carbon emission trading and are they ready to participate in trading CERs products? Please explain your view.*

Hong Kong as a global hub in financial services has the capacity to develop deep expertise in emission trading, given the potential reward and benefits of diversification in the area. Being a pioneer in the market would also sow the seed for future benefits as the market matures. It is particularly so in light of the key success factors above that Hong Kong possesses.

Hong Kong's stature as a major global financial center provides a pipeline of emission trading professionals either through internal transfers within global financial institutions, or external recruitment. A number of foreign banks with major emission sales and trading operations in Europe already has teams of professionals in Hong Kong working as originators, among others, of emission offsets, due to the proximity to Mainland China and other neighboring countries generating offset credits. Local talents well-versed in finance could also develop sector-specific knowledge that complements their trading experience.

It is also important for Hong Kong to be a pioneer in the area, so that the Hong Kong based instrument is already established and becomes the benchmark when the market

matures. The evolution of an instrument to being a benchmark is just as West Texas Intermediate is the benchmark of the worldwide crude oil trade. Even though this particular grade of crude composes a small portion of the overall crude oil consumption, and is affected by the inventory levels in Cushing, Oklahoma, the NYMEX designated delivery site, the price implication is felt worldwide.

4. *If you are a financial intermediary, please respond to the following questions:*
   a. *Do you see any potential in the asset class of carbon emissions and how would you rank the priority of carbon emission trading business among your other business initiatives? (high, medium or low)?*
   b. *How would you assess your clients' interest in carbon emission trading? Do you have the know-how and expertise in handling carbon emission trading related operations and providing advisory services to your clients?*
   c. *Are you located in Hong Kong and if so are you an Exchange Participant of Hong Kong Futures Exchange?*

Not applicable.

5. *Are there any other issues regarding the introduction of CER futures not mentioned in this consultation paper that we ought to consider? Please explain your view.*

As explained above, the benefits of diversifying into other energy commodities for hedging and trading purposes should be considered.

6. *Do you have any other comments in relation to the overall development of emissions or pollutants trading markets in Hong Kong?*

I am writing as a private citizen of Hong Kong,

All statements expressed are my own, unless otherwise cited.

I trust that the above would help to answer some of the questions that HKEX has on the establishment of an emissions offsets futures market in Hong Kong. Please contact me at the email address , should you have further questions.

Sincerely,

Anthony Yuen, Ph.D.