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Global Voluntary Carbon Markets (VCMs) and Market Infrastructure

Paving the road to increased market efficiency

Policy Brief
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1. Summary

This policy brief provides insights on global VCMs and market infrastructure following a roundtable held in London on 19 October 2023. The roundtable, hosted at the City of London Corporation's Guildhall, was led by Imperial College Business School's Centre for Climate Finance & Investment and the Singapore Green Finance Centre, in association with global exchanges and platforms such as the LSEG, Climate Impact X and Carbonplace, and participation from Foresight Sustainability Forestry and UBS.

The roundtable focused on the role of market infrastructure in scaling up voluntary carbon markets (VCMs). It analysed the importance of price discovery, the impact of financial innovation, and the evolving regulatory trends for global carbon markets, VCMs and compliance. The insights gathered from this discussion can help shape policy recommendations. They aim to enhance the functionality, transparency, and effectiveness of VCMs, which are largely recognised as pivotal for decarbonization efforts and use these new emerging assets and financial instruments as a tool for financing.

What is the role of a regulated market infrastructure in VCMs? Market infrastructure plays a fundamental role in the effective operation and scalability of VCMs. It encompasses a range of elements including current trading platforms, regulators, and financial institutions. Collectively, these components facilitate transparent transactions, aid in price discovery, and ensure liquidity provided by banks and capital markets while ensuring compliance and market confidence.

The roundtable highlighted the need for a cohesive infrastructure that integrates both voluntary and compliance markets in certain sectors. This integration would be crucial in allowing the increase of supply and demand of high-quality carbon credits in a regulatory environment, increasing the liquidity of global carbon markets, minimising entry barriers, and fostering an environment conducive to investment and growth in VCMs.

Carbon pricing. Pricing within VCMs plays a vital role in determining the viability and attractiveness of carbon credit projects. It influences market dynamics and investment decisions, significantly impacting the economic feasibility of carbon reduction initiatives. The roundtable discussion underscored the necessity of a transparent and predictable pricing mechanism. Suggestions (such as establishing a floor price or implementing a carbon tax) were proposed to provide minimum-price guarantees and enhance investment security. Accurate and stable pricing reflects the true environmental value of carbon credits and drives investment towards high-quality, impactful carbon reduction projects.

Regulatory trends and their impact. The evolving regulatory landscape is a critical aspect of VCMs. Establishing clear and comprehensive guidelines and standards is essential for ensuring market integrity and fostering transparency. The roundtable highlighted the importance of government involvement in creating policies that encourage market growth, while preventing malpractices such as greenwashing. The potential for regulatory convergence between voluntary and compliance markets was also highlighted, underscoring the need for international cooperation and standard alignment for a more unified global carbon market.

2. Conclusions

The roundtable examined the opportunity to leverage regulated market infrastructure to build up integrity and market efficiency in global carbon markets, highlighted the importance of price discovery and relevant policies to address price signals, and discussed regulatory trends (such as the likely expansion of emission trading schemes to relevant sectors in voluntary markets). It also emphasises the need for governments to provide stability with sustainable policies, reinforcing the role of capital markets.

The roundtable highlighted the transformative role of financial innovation in enhancing the accessibility and efficiency of VCMs. New financial mechanisms, including global transaction networks like Carbonplace, play an important role in simplifying the distribution of voluntary credits and improving overall market liquidity. These innovations aim to streamline transaction processes, reduce complexity, and introduce practical risk management tools. Additionally, the integration of carbon credits into broader financial markets through novel financial products and services can significantly increase market attractiveness and investment potential.

High-level recommendations

- Based on discussions at the roundtable, policymakers are encouraged to enhance the role of exchanges, marketplaces and innovative platforms to build an integrated market infrastructure that connects voluntary and compliance markets, facilitating efficient transactions and effective price discovery;
- Increase transparency in pricing mechanisms, and establish stable and clear pricing structures, including floor prices and carbon taxes. This will guarantee reliable investment returns and boost market confidence;
- Launch collaborative initiatives like Climate Action Data Trust (CAD Trust), established by the World Bank, the International Emissions Trading Association (IETA), and the government of Singapore. CAD Trust is a new carbon credit platform that aims to clean up the market and integrate several registries, consolidating all carbon credit projects and data in one place.
- Encourage financial innovation. The development of innovative financial products and services, tailored to the unique needs of carbon markets, can increase liquidity and investment opportunities;
- Strengthen regulatory frameworks by enabling international collaboration to harmonise regulations and standards, ensuring market integrity, and preventing malpractices. Explore potential connections of international ETS to increase liquidity and promote convergence with voluntary markets; and,
- Promote public-private partnerships. Enhance collaboration between governments and private sectors to leverage collective expertise, resources, and innovation in effectively scaling up VCMS.

3. Rationale and framework of the discussion

The roundtable addressed the role of regulated market infrastructure, exchanges and innovative carbon market platforms in contributing to market efficiency and integrity in carbon markets. “What is the role of a regulated market infrastructure?” “How do carbon pricing and tax frameworks help to provide the price signal required to invest in carbon offsets?”

Chaired by the City of London’s Catherine McGuinness, the roundtable addressed the current state of the VCM in terms of price transparency, liquidity, and availability of market infrastructure through a discussion around the following key themes: the role of a regulated market infrastructure, carbon pricing, financial innovations in global carbon markets, governance, regulated trends and market impact.

The roundtable was arranged within the UK-Singapore Green Economy Framework (GEF) signed in March 2023 and enhanced in July 2023 between both countries. This framework includes three core pillars, with the third pillar focused on carbon markets (covering Article 6, VCMs, and domestic compliance markets) to support and scale up high-integrity carbon markets.

The UK and Singapore have decided to collaborate on a VCM Convening Forum, bringing together the full value chain of VCMs, including platforms, exchanges, multi-stakeholder initiatives, and project developers, to explore how the UK-SG GEF could support VCM scale-up. This roundtable has been developed in this context and will be followed by an in-person event in Singapore in 2024.

The City of London hosted this first roundtable of the VCM Convening Forum and is a founding sponsor of the Integrity Council for the Voluntary Carbon Market (IC-VCM). It has provided secretariat support to the UK VCM Forum, a private sector initiative working to amplify good governance and market infrastructure supporting VCMs since 2021.

The roundtable discussion focussed on barriers and opportunities to co-create solutions in providing policy guidelines. It addressed what market infrastructure in carbon markets is and how it can help unlock the potential of carbon markets as a financial tool to net zero. Whilst there are challenges to address, it is vital to ensure that carbon markets contribute to reducing or avoiding emissions.

Participants acknowledged a real potential for carbon markets. Still, they noted that rapid growth has brought increased scrutiny regarding the quality of the credits, the distribution of benefits, and concerns about the alleged use of credits for supporting greenwash activities. They noted the opportunity for VCMs to facilitate the deployment of finance to support transition in developing countries, along with the challenge of ensuring this is done with integrity.

Stakeholders highlighted the necessity for precise definitions and appropriate use of high-quality carbon credits. There are challenges around disclosure, assurance processes, registries and aligning international standards for both voluntary and compliance markets. The government can play a role in ensuring the integrity of the growth of VCMs. This includes considering regulatory measures to ensure the market supports net-zero objectives and boosts market confidence.

Collaborative partnership efforts across sectors are crucial for addressing stakeholder concerns, strengthening the integrity of supply and demand, and enabling markets to contribute to the delivery of the Paris Agreement. The UK government supports the IC-VCM and the Voluntary Carbon Market Integrity initiative (VCMI).

4. What is the role of a regulated market infrastructure? How can we use the power of a marketplace to cut emissions and raise funding to finance the transition?

Firms represented at the roundtable were drawn from existing carbon market infrastructure participants. The London Stock Exchange VCM designation was launched officially in October 2022. Foresight Sustainable Forestry is a listed investment company on the London Stock Exchange and stands as London's first and only listed investment company focused on natural capital. Climate Impact X is a global marketplace, exchange, and auction house for trusted carbon credits, jointly established by the Singapore Exchange, DBS Bank, Standard Chartered and Temasek. Carbonplace, the sole global carbon credit transaction and settlement network, aims to facilitate banks in distributing voluntary credits to their clients and facilitating their liquidity provision into the market as a whole. UBS, a founding partner of the "Singapore Green Finance Centre" is a leading player in global carbon markets on the path to net zero.

Following the opportunity presented by market infrastructure in the space of carbon markets, exchanges in APAC launched several initiatives. The Tokyo Stock Exchange (TSE) launched Japan's first exchange-based carbon credit market ("Market") on 11 October 2023, which allows registered participants in the Market to have a more efficient platform for carbon credit trading in Japan and improved carbon pricing transparency. In Malaysia, Bursa Carbon Exchange (BCX) launched the first Sharia-Compliant Carbon Exchange and held its first carbon credit auction in March this year. Indonesia also launched its first carbon exchange market on 12 October 2023. Before that, Indonesia enacted several legislations regarding carbon trading in Indonesia.

Firstly, a carbon market is a powerful financing tool because it is a result-based financing mechanism, rewarding projects that contribute towards decarbonization efforts, such as afforestation, deploying renewable energy, and enhancing energy efficiency. By undertaking and completing these projects, participants receive payment through carbon credit issuance. These credits, validated by independent verification firms, become tradable commodities in the market allowing them to deploy capital on the ground.

The growth of these markets requires increased regulation, as they have shifted from a large-scale global market to a smaller industry sustained by voluntary standards. To scale up these markets, participants felt there was a need for further engagement and recognition of their potential as mechanisms for transferring capital from developed to developing regions and climate finance mechanisms within countries with significant resources.

The institutionalisation of the market creates an investment-grade traded market and the opportunity to finance climate action globally. A Stock Exchange enables investment in hard-to-sell assets through listed funds, allowing institutions to invest in these assets using a more easily tradable instrument. The LSEG VCM designation acts as an improved disclosure system to boost investor confidence in the carbon market by establishing additional rules.

Secondly, the role of the market is to help with efficient capital allocation. Market infrastructure in VCMs lowers the barriers to entry, reduces information asymmetry and helps trade efficiency. This will bring standardisation and lead to the emergence of benchmarks and risk management tools. On the other hand, to scale as a prerequisite, Singapore has been pioneering with its carbon tax framework and open market approach. They allow global credits to be used for domestic emission offsets and have reduced the limitations on carbon credits by removing the tax on carbon.

The question was raised of how we remove some of the frictions in a market very much characterised by bilateral and OTC transactions. In addition, how should a bank's approach be managed regarding knowing your customer (KYC), anti-money laundering (AML), bank settlement, and registries worldwide via a partner bank's infrastructure? This is where a membership platform for banks like Carbonplace can ultimately facilitate price formation and disclosing transaction rates.

By having banks introduce their corporate clients into a network where the banks handle KYC, AML checks and settlement, they aimed to alleviate these complexities. Carbonplace also acts as a facilitator, as the platform manages accounts for corporate clients while maintaining the client's ownership of credits.

There is value in this bank's platform – in a market where each credit is distinct and different, where thousands of items trade with scarce liquidity. Liquidity formation occurs easily as banks form this. Ultimately, we need to consider carbon credits a "corporate credit" with a risk management approach.

In terms of regulation, we lack a proper calibration of risk weights for carbon credits, as well as the lack of financial accounting rules for carbon markets. This impact on capital treatment, which is punitive for banks, poses challenges to meeting the return hurdles required in their capital allocation. This difficulty hinders financial intermediaries from holding an inventory of these credits.

Regulation is vital in driving demand and ensuring the fair valuation of high-integrity credits within the market. Regardless of the direction chosen, there is a strong call for more explicit regulations. These regulations would encourage and boost demand while aiding in establishing fair prices for high-quality credits.

5. Pricing, Regulation and Financial Innovation

Effective price discovery is crucial for increasing financial inflows into carbon credits and decarbonization ventures. Ideally, a baseline price and a carbon tax would exist to ensure a guaranteed minimum value for carbon credits. This stability encourages investors to pay higher upfront costs, similar to long-term contracts in infrastructure, thereby unlocking projects that would otherwise be economically unviable into financially viable projects.

However, the current situation falls short. While there are emerging carbon price indexes (e.g., the UK Woodlands index), they need more depth. Carbon credits are not standardised commodities; each credit and project possesses unique traits and benefits. Transparency regarding credit vintages needs to be improved. This significantly impacts credit valuation. Existing indexes merely reflect average prices without accounting for vintage specifics, affecting investor perceptions.

What is needed is greater transparency in indexes and underlying transactional data to instil investor confidence. Precise information about carbon credit prices tied to specific project characteristics, including vintage profiles, would facilitate more investment in otherwise unprofitable projects.

Participants asked if there was a role for carbon tax frameworks (CTF) to help with price discovery and how this could help provide the price signal investors and asset managers need to invest in carbon markets. Implementation is critical, as taxes in carbon markets are an incentive to develop lower-carbon technologies and are a source of revenue for governments to finance the energy transition.

Considering the convergence of voluntary and compliance markets, the roundtable asked how regulatory measures could impact pricing. If both markets continue to develop independently, this would be inefficient for global carbon markets. The convergence of both markets might help foster the demand for high-quality credits, increasing price and liquidity.

As VCMs mature, pricing is expected to become more transparent, shifting from broker-based transactions to visible on-screen mechanisms.

This transition will enable pricing and several subsequent future options, leading to de-risk financial players' entry into VCMs (whether on the investment side, into projects, or on the financial side, typically by futures markets).

In pricing and regulation, transparency plays a vital role in self-policing. In discussions about regulating registries, the question about the global scope for these registries to collectively disallow such anonymous retirements. Registries should mandate buyers to identify themselves rather than providing an option for anonymity to enhance transparency.

Disclosing pricing information would establish reliable benchmarks and analytical insights, boosting market effectiveness. Moving beyond pricing discussions, improved transparency regarding project details and implementation costs can reshape perceptions and lead to better market evaluation.

The roundtable asked how those solutions could be deployed quickly for this new asset class and what role rating agencies had to help with this. In assessing the value of carbon being sold in the market, the focus is not just on whether payments aid decarbonization efforts but on the certainty regarding the legitimacy of each carbon ton from specific projects. It is crucial to bring analytical tools that evaluate the risk associated with these tons, allowing adjustments for their associated risk level.

Rating agencies have been instrumental in introducing the concept of risk to the market, a critical factor for scaling the market effectively. Integrating risk management practices into market operations is pivotal to avoid misinterpretations and ensure informed investments while upholding market integrity. By quantifying and communicating risk, investors can adjust purchases with an associated risk level, enabling a cost-effective approach to offsetting emissions.

Regarding pricing, participants referred to a baseline price as a benchmark, starting point or reference value but not necessarily as a guaranteed price. Participants raised the issue of a minimum floor price level set for carbon credits.

A floor price in carbon markets holds significant importance, but its implementation raises certain challenges. Banks and financial institutions find it difficult to participate in these markets wholesale without a reliable risk-free rate as a foundation for valuation. Establishing this baseline risk-free rate is crucial for setting values and enabling market growth.

Again, complexity, especially concerning vintages, remains a barrier to market development. It is essential to evaluate a project's evolution and determine its current value based on its latest vintage. The market value of a project should reflect its recent performance and demand, which would impact the prices of previous vintages. Simplifying these underlying complexities would accelerate market development.

Although a floor price might provide a guarantee for investors in the long term, this could have the opposite effect. Solely imposing a floor price might not necessarily stimulate demand in the short term, especially without corresponding regulations mandating decarbonization efforts. Instead, focusing on establishing a base carbon credit (even if it is not the most attractive option) could provide a foundation for pricing. However, this is challenging in the current market landscape.

Imperial College Business School's Centre for Climate Finance and Investment

The Centre's purpose is to unlock solutions within capital markets to address the challenges posed by global climate change and to execute interdisciplinary research combining intellectual rigour and industry relevance. The Centre generates a new understanding of the risks and investment opportunities arising in this context through collaboration between academics and practitioners.

Singapore Green Finance Centre

The Singapore Green Finance Centre is an Imperial College Business School and Singapore Management University initiative, backed by the Monetary Authority of Singapore and leading global financial institutions.

The City of London Corporation

The City of London Corporation (COLC) supports the development of high integrity voluntary carbon markets which incentivise firms to decarbonise by paying a fair price for their emissions. Since 2021, COLC has provided secretariat support to the UK VCM Forum, a private sector initiative which works to amplify good governance and market infrastructure supporting VCMs. COLC is also a founding sponsor of the Integrity Council for the Voluntary Carbon Market (IC-VCM). CoLC is the governing body of the Square Mile dedicated to a vibrant and thriving City, supporting a diverse and sustainable London within a globally successful UK.

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