

EVOLUTION OF THE CARBON MARKETS





01	INTRODUCTION	<i>Pg 4-5</i>
02	DRIVING CLIMATE AMBITION	<i>Pg 6-9</i>
03	FROM THE CDM TO NOW	<i>Pg 10-13</i>
04	A YEAR IN REVIEW	<i>Pg 14-16</i>
05	GETTING TO NET-ZERO EMISSIONS IN EUROPE	<i>Pg 18-21</i>
06	TARGETING INDUSTRIAL DECARBONISATION	<i>Pg 22-24</i>
07	LAC: THE EVOLUTION OF A GROWING REGION	<i>Pg 24-26</i>
08	ARTICLE 6: A (FLAWED) MARKET MECHANISM FOR A NEW ERA	<i>Pg 28-31</i>
09	CARBON MARKETS IN THE YEAR 2030	<i>Pg 32-35</i>
10	NEW DIGITAL INFRASTRUCTURE FOR CARBON MARKETS	<i>Pg 36-39</i>
11	BEYOND EMISSIONS: THE EVOLUTION OF THE VOLUNTARY CARBON MARKET	<i>Pg 40-43</i>
12	INTEGRITY IN THE SPOTLIGHT	<i>Pg 44-47</i>
13	VCM AROUND THE WORLD	<i>Pg 48-51</i>

SINCE 1999 IETA HAS BEEN THE LEADING VOICE OF BUSINESS ON AMBITIOUS MARKET-BASED CLIMATE CHANGE SOLUTIONS AND DRIVING NET ZERO. IETA ADVOCATES FOR TRADING SYSTEMS FOR EMISSIONS REDUCTIONS AND REMOVALS THAT ARE ENVIRONMENTALLY ROBUST, FAIR, OPEN, EFFICIENT, ACCOUNTABLE AND CONSISTENT ACROSS NATIONAL BOUNDARIES. REPRESENTING MORE THAN 300 LEADING INTERNATIONAL ORGANISATIONS, IETA IS A TRUSTED PARTNER IN DEVELOPING INTERNATIONAL POLICIES AND MARKET FRAMEWORKS TO REDUCE GREENHOUSE GAS EMISSIONS AT THE LOWEST COST WHILE BUILDING A CREDIBLE PATH TO NET ZERO EMISSIONS. SEE WWW.IETA.ORG FOR MORE INFORMATION. IETA EXPRESSES ITS GRATITUDE TO ALL AUTHORS WHO HAVE CONTRIBUTED TO THIS REPORT AND TO ALL OTHERS WHO HAVE WORKED ON THE PUBLICATION.

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INTRODUCTION

THE EVOLUTION

OF CARBON

MARKETS MATCHES

THE GROWTH IN

AMBITION AND

SCOPE OF CLIMATE

ACTION.



THE WORLD OF CARBON MARKETS HAS CHANGED SIGNIFICANTLY SINCE THE LAUNCH OF THE EU EMISSIONS TRADING SYSTEM (ETS) AND THE ENTRY INTO FORCE OF THE KYOTO PROTOCOL IN 2005.



WHAT A JOURNEY IT'S BEEN!

Carbon pricing has been tried, it has been tested, and it has evolved. After 18 years, we can even say that it's succeeded, since the cost of producing greenhouse gas emissions is now firmly embedded within corporate budgets and is driving operating strategies and investment decisions from California to Korea.

And it's spreading, too. Carbon markets are not just a tool for developed economies anymore, but they're becoming a conduit for finance to flow into developing and emerging economies, both through the Paris Agreement and through the surge in interest in the voluntary market.

In 2023 alone, we've watched the emergence of carbon pricing regimes from Brazil to India to Indonesia, as more countries prepare for the advent of a truly global emissions trading system under Article 6 of the Paris Agreement.

In 2005, Europe kicked off its ETS with universal free allocation and some questionable historical data. The market endured criminal activity, VAT fraud and the global financial crisis but has emerged as the state of the art for a closely regulated, ambitious – 55% cut below 1990 emissions by 2030! – yet liquid and vibrant market.

Europe's lead was quickly followed by California and the northeastern US states, by Quebec and Alberta, New Zealand, Switzerland and South Korea.

The European market is creating a price signal that is driving coal steadily off the grid, empowering investment in revolutionary technologies like green hydrogen, and has cut GHG emissions by more than 37% since 2005.

While the EU ETS was getting started, the Kyoto Protocol also kicked into gear, triggering billions in investment in clean technology around the world. Remote communities benefited from distributed solar power to replace fossil fuel-based lighting and heating, methane emissions from landfills and livestock farms were captured and used to generate electricity. And from these thousands of projects, local communities saw expansion of clean energy – and emissions reductions flowed back to the investors, allowing large corporations to comply with targets at a more affordable cost.

But by the early-2010s, it was clear that the limited ambit of the Kyoto Protocol wasn't sufficient. The climate community set to work again, crafting the Paris Agreement and ushering in the age of "net zero".

This underlines an important point: when it comes to climate action the direction of travel is only, ever, upwards. We need to do more, and we must always strive to do more.

The private sector understands this only too clearly, and the revitalisation of the voluntary carbon market (VCM), during a period when negotiations over how to implement Paris had become bogged down, demonstrated that it's not just nature that abhors a vacuum.

Under Paris, and with the VCM pursuing a parallel path, our ambitions have grown even greater. Companies are no longer satisfied with simply offsetting their emissions: they are also embracing the need to drive real, permanent net reductions in the atmospheric concentrations of GHGs.

This has brought the development of carbon removals as a new class of climate instrument. It's no longer enough to think of carbon reductions or avoidance as the path to net zero; we need to remove carbon as well.

The development of removals as a class of carbon instrument was borne out of the VCM but is now being taken up by the EU and by the Paris Agreement.

Our technology has taken on greater ambition too: direct air capture, "blue" carbon in our oceans and waters, enhanced rock weathering: the stuff of science fiction is becoming science fact, and these approaches can store carbon at ever greater volume.

To be sure, we are still a long way from weaning ourselves off coal, oil and gas. But with well-designed carbon markets, we have the tools to do so. The environmental and financial incentives are even more firmly embedded than they were in 2005, and we can start to look ahead to an era when we can achieve the goals of net zero.

Dirk Forrister
IETA CEO & President

DRIVING CLIMATE AMBITION

BY MYTHILI SAMPATHKUMAR

IN 2015, 180 COUNTRIES SIGNED ON TO THE PARIS AGREEMENT WITH EACH LAYING OUT THEIR GOALS—ALSO CALLED NATIONALLY DETERMINED CONTRIBUTIONS (NDCS)—TO REDUCE CARBON EMISSIONS AND CONTAIN GLOBAL WARMING “WELL BELOW” 2°C (35.6°F).

The agreement resulted in a flurry of activity from governments in the intervening years in the form of promoting electric vehicles, taxing carbon emissions, incentivizing “green” efforts, investing in renewable energy sources like solar and wind, and transitioning their countries away from fossil fuels.

However, climate scientists are still concerned. Extreme heat, sea level rise and melting polar ice caps, which could lead to flooding and destruction of ecosystems crucial to feeding the world, are all still at risk as politics, special interests and governmental bureaucracy keep some of the world’s largest polluters from taking meaningful steps to reduce greenhouse gas emissions.

According to Washington, DC-based think tank World Resources Institute, “the world has already witnessed about 1°C of temperature rise and is on track to exhaust the carbon budget associated with 1.5°C by 2030.” The “carbon budget” — determined by the cross-border group of scientists with the Intergovernmental Panel on Climate Change (IPCC) — is the number of gigatons of carbon dioxide the world can emit before the planet warms to 1.5°C and we see even more damaging effects of climate change.

The good news is that businesses are stepping up to the plate to help the planet and fill at least part of that gap in action to fight climate change.

A HOT INVESTMENT IN THE WORLD’S FUTURE

A recent study conducted by Trove Research, a UK-based climate data analysis firm, found that investment into carbon credit projects between 2012 and 2022 totaled \$36 billion. Half of those investments were made in the last three years, with more than \$3 billion committed for future investments already.

Pardon the pun, but it is clear that projects with the ultimate intention of reducing carbon emissions are a hot investment in 2023 and beyond — and not just for the financial returns. As the world grapples with increasing temperatures and frequency of natural disasters, investment into these types of projects is also crucial to “cutting greenhouse gas emissions to as close to zero as possible, with any remaining emissions reabsorbed from the atmosphere, by oceans and forests,” says the United Nations Net Zero Coalition.

Some level of carbon emissions is unavoidable, but developing viable projects to reduce carbon emissions by 45% within the next eight years could allow us to reach net zero by the 2050s and give the world time to develop technologies and practices that are less carbon-intensive in many industries.

But, in order not to exhaust the carbon budget, Trove Research noted, “the current rate of investment in carbon credit projects is only one-third of the level needed to deliver the volume of credits required by 2030. ... The world needs a further \$90 billion of capital to achieve the necessary volume of credits required under this scenario.”



**“WE NEED NET ZERO STRATEGIES
FOR EVERY SINGLE BUSINESS TO ENSURE
SYSTEMWIDE DECARBONIZATION”**

– ANDREA ABRAHAMS, ICROA



2°C

A BURGEONING MARKETPLACE

As Andrea Abrahams, managing director of the International Carbon Reduction and Offsetting Accreditation says: “Decarbonizing value chains is complex and requires deep transformation of business models and technologies; there is no quick fix. ... We need net zero strategies for every single business to ensure system-wide decarbonization.”

One of the ways IETA can help businesses do this is navigating the voluntary carbon market (VCM), where companies can buy and sell carbon offset credits constituting 1 metric ton of carbon dioxide or GHG emissions. Abrahams notes the VCM “provides companies with a tool to invest in global decarbonization beyond their own value chains, where and when GHG reduction activities within their own value chains is limited.” So if a company in the US cannot reduce its emissions to zero, it could buy credits from a company in India or Brazil, for example, that earned that credit by reducing its emissions.

The VCM also allows a variety of industries to take on decarbonizing beyond efforts to get the fossil fuel industry to do so. For instance, Agoro Carbon, launched by Yara, is a global climate solutions company specializing in regenerative agriculture. As Agoro Carbon Alliance commercial director Dylan Lubbe explains, “Regenerative agriculture represents more than just an emission reduction pathway; it’s a multifaceted solution that yields broader benefits. Beyond carbon sequestration, it enriches ecosystem biodiversity, fortifies food security, elevates water quality and, most notably, rejuvenates soil health.

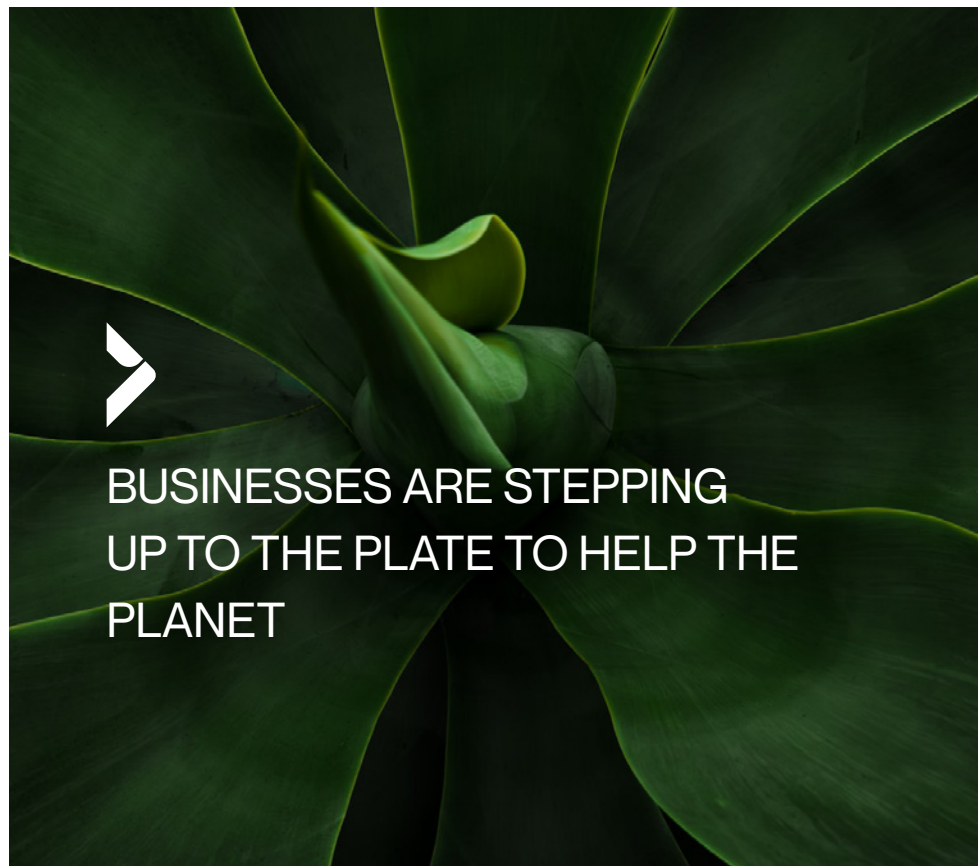
“It’s the embodiment of a holistic pathway,” Lubbe says. The company’s agronomists, who specialize in crops and livestock production, work alongside and center farmers and ranchers in their approach to helping implement regenerative agriculture practices and achieve carbon sequestration. Agoro Carbon also recognized that often a barrier for farmers and ranchers to become part of the VCM is a lack of financial resources, and it has committed to “bridging this gap,” as Lubbe explains. The buyers of these science-backed, high-quality carbon credits produced as a result of regenerative practices are also empowering farmers and ranchers to sustainably continue these practices.

The VCM operates outside the realm of a compliance, or cap-and-trade, market. In the latter, only a certain number of permits are issued in order to limit the amount of GHGs a country or whole industry can emit. Countries and the United Nations are working on redesigning the international compliance market ahead of COP28, the UN climate change conference, in Dubai next month.

Since the VCM is voluntary and does not require emissions reductions, experts and investors have worried about the quality of the credits and the potentially unexamined negative environmental impacts of the projects done to produce them. But, these markets also led to crucial investments in renewable energy and nature-based solutions when those were still relatively unexplored pathways to net zero. Verra is taking on the challenge of supporting these markets as one of the leaders in establishing a set of standards and methodologies. “We’ve helped create and quantify an entirely new way of addressing some of the most difficult challenges facing our planet, all without the governments of the world leading the way,” chief communications officer Hillary Navarro says.

As the VCM matures, so does Verra. The company recently issued its latest iteration of standards and methodologies by “getting the smartest people in the room ... to develop the most rigorous science-based standards that we possibly can [in order] to deliver the best impact, not only in terms of climate impact, but also biodiversity and community benefits,” Navarro says. Verra not only provides a benchmark for project developers. Investing in a project that is Verra-certified also provides carbon credit buyers with some measure of quality assurance. Verra standards have helped funnel billions of dollars to finance real climate action, according to Navarro.

SINCE THE VCM IS VOLUNTARY AND DOES NOT REQUIRE EMISSIONS REDUCTIONS, EXPERTS AND INVESTORS HAVE WORRIED ABOUT THE QUALITY OF THE CREDITS AND THE POTENTIALLY UNEXAMINED NEGATIVE ENVIRONMENTAL IMPACTS OF THE PROJECTS DONE TO PRODUCE THEM



BUSINESSES ARE STEPPING UP TO THE PLATE TO HELP THE PLANET



VOLUNTARY MARKETS LED TO CRUCIAL INVESTMENTS IN RENEWABLE ENERGY AND NATURE-BASED SOLUTIONS WHEN THOSE WERE STILL RELATIVELY UNEXPLORED PATHWAYS TO NET ZERO

CARBON REDUCTION IS NOT THE ONLY IMPORTANT PATHWAY TO NET ZERO

Verra is not working only on carbon markets either. Much of the global discourse on climate change focuses on carbon sequestration, but there are alternative pathways to net zero that are just as important.

More than 350 million tons of plastic leak into the environment each year and less than 9% gets recycled, according to Verra. The company's Plastic Waste Reduction Program was developed as a result to issue plastic credits for plastic waste collection or recycling activities after a rigorous development and assessment process is completed. Every plastic credit is equivalent to "a metric ton of plastic waste that has been collected or recycled above a baseline rate," according to the company's site.

These plastic credits do not operate in the same way an offset carbon credit does. Rather, they provide a way for companies to recirculate money back into additional waste collection and recycling projects and can provide additional income for waste collectors operating in an "informal" capacity, providing safeguards for their working conditions as well.

Another important pathway to net zero that is not often discussed is the destruction of non-CO2 GHGs. Tim Brown, CEO of Tradewater says, "These greenhouse gases are very difficult to get after, but are critical in preventing runaway climate change."

Methane, halons and refrigerants make up almost half of all GHG emissions from human activity in the last half century, and halons in particular are "more than 10,000 times more potent than CO2," Brown explains. He adds that the IPCC and other experts agree: "There is no

pathway to keep warming at 1.5°C or below unless we address non-CO2 gases."

Tradewater has collected and destroyed refrigerants and methane from abandoned mines and orphaned oil wells equivalent to 6.7 million metric tons of CO2 thus far and is participating in two markets to do even more in the near future. As Brown explains, the company is part of the compliance market, which in the U.S. is active in California, Washington State and in a coalition of states in the north-east via the Regional Greenhouse Gas Initiative covering the power sector. It is also active in the VCM. He says Tradewater works "with companies that have made net-zero commitments and want to be associated with these non-CO2 gas projects and where there may be synergy or strategic choices to include our projects in their portfolios. That's really what makes the difference, and the more demand that we can generate for this work, the more impact that we can create. So there is a direct relationship between the carbon markets and our ability to collect, control and destroy these gases."

Not only large businesses have net zero commitments. Any reduction in emissions is going to be progress toward net zero, and with its Carbon Neutral Collective, Tradewater enables small- and medium-sized businesses to participate in the process as well. These companies often do not "have the internal resources to understand what their carbon footprint is, or even have the resources to hire a consultant as maybe a larger firm would. So, we created a carbon calculator that allows them to quickly put in a few inputs to understand their carbon footprint. So a small-business owner can log in, calculate their carbon footprint, and then are able to offset right there and mitigate that footprint," Kirsten Love, director of market development explains.

FROM THE CDM TO NOW

BY PEDRO CARVALHO AND ALEXIS MASSOT

PROJECTS TO REDUCE EMISSIONS HAVE GONE THROUGH SEVERAL ITERATIONS, WITH THE CDM MARKING THE FIRST BIG EVOLUTION IN THIS SPACE. AS TECHNOLOGY AND KNOWLEDGE HAVE BOTH IMPROVED OVER THE YEARS, THE MARKET IS NOW ENTERING A NEW PHASE FOR EMISSIONS REDUCTION PROJECTS. PEDRO CARVALHO AND ALEXIS MASSOT EVALUATE HOW THINGS HAVE CHANGED

In the past few decades, carbon project development has witnessed significant transformations. Since its initial voluntary adoption, project developers have navigated through various market dynamics, emerging schemes, novel methodologies, and evolving technologies. They have grappled with shifting political landscapes, increasing complexity, and the undeniable reality that the huge gap in climate finance remains. The landscape is constantly evolving to provide innovative solutions towards a low-carbon economy.

While not perfect at times, carbon project development has been marked by participative, open processes fostering broader participation by interested parties. This has led to a culture of cyclical and regular improvements, first at the CDM level and more recently with voluntary standards. The scale and stringency required to enable top-quality and impactful carbon projects are high, and adjustments are normal.

The following few paragraphs will try to highlight key moments and phases in project development since pre-CDM times.

PHASE 0:

HOW IT STARTED

The inception of emission reduction projects can be traced back to the 1980s, a time when there were no international agreements or regulations governing carbon markets. These early projects operated on a voluntary basis and laid the foundation for future developments. The key challenges during this phase included the

absence of a regulatory framework and uncertainty regarding project viability. However, pioneers in this field began experimenting with carbon offset projects, setting the stage for what was to come.

It was in 1991 that the first two pilot carbon forestry projects were ever developed, in Malaysia. However, how credible could the project be if there were no independent auditors to confirm the methodology and conclusions? It was then, in 1996, that the first carbon offset verification service was developed and, right after, Costa Rica created a pioneering business case for project developers.

PHASE 1: THE KYOTO PROTOCOL AND SETTING THE FOUNDATIONS

The 1990s marked a crucial turning point with the establishment of UNFCCC and, later, the Kyoto Protocol. These international agreements provided a framework for the carbon markets and, building on previous experiences, the CDM was established with the requirement of independent audit to certify the projects. During this period, the project cycle was defined, a regulatory framework was put in place, methodologies to monitor, report and verify (MRV) emissions reductions were developed and, without significant changes, the carbon project cycle has remained unchanged. Somehow curious to note that the first market experiences already relied on nature-based interventions, but upon the scaling of CDM, projects relating to energy and industrial processes dominated the space.

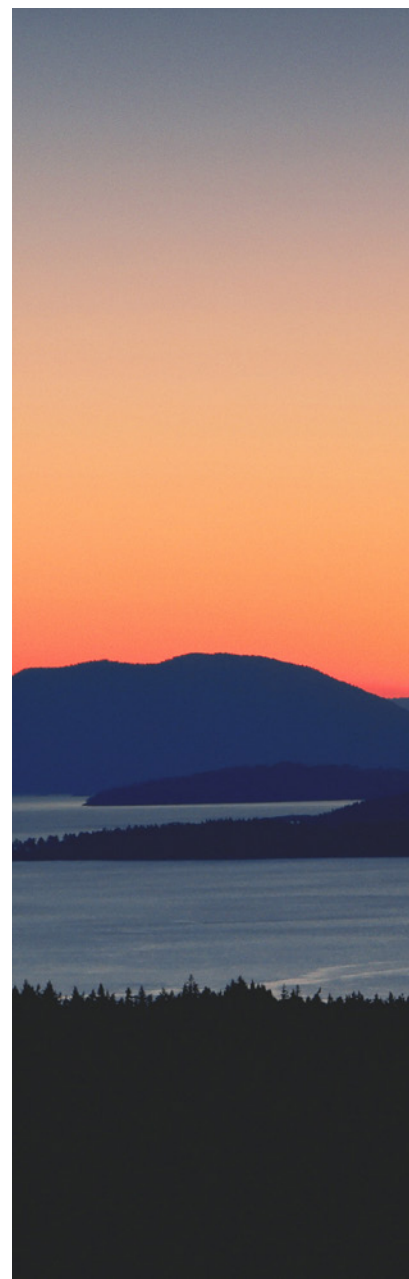
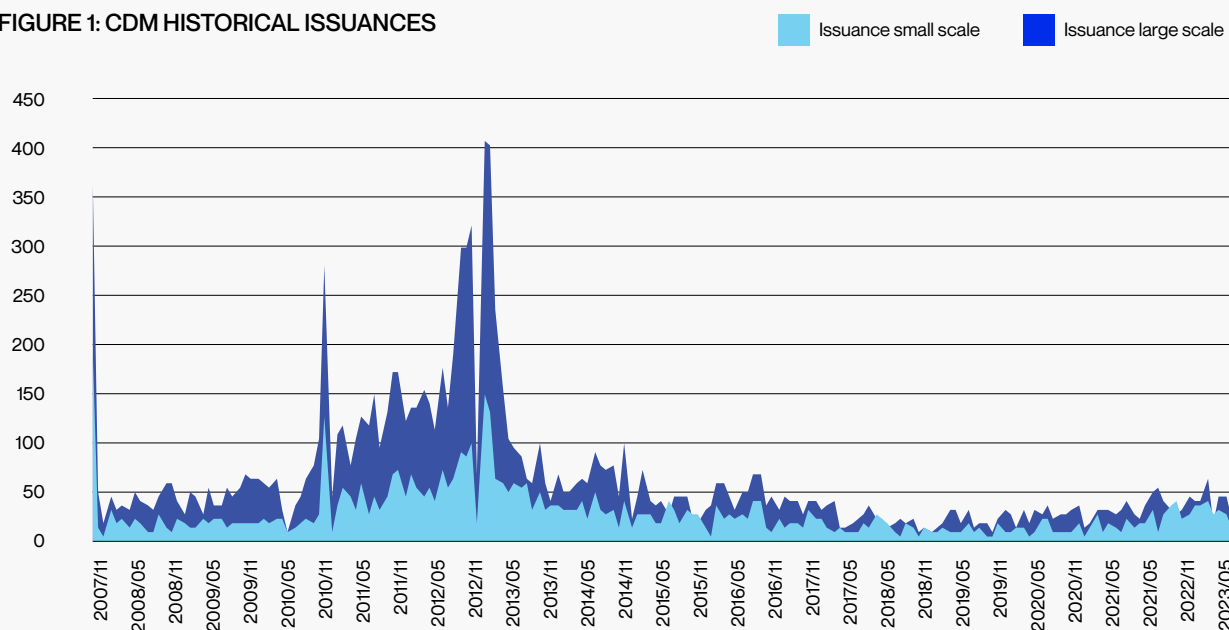


FIGURE 1: CDM HISTORICAL ISSUANCES



In 2004, in a moment when the CDM was taking its first steps and dealing with early-stage questions to enable a quick scaling up of carbon markets vis-à-vis the provisions of Kyoto Protocol, a landfill project in Brazil became the first to be registered under the mechanism. This significant milestone was followed by the first issuance of certified emission reductions (CERs) in 2005. Simultaneously, the EU Emissions Trading System (ETS) was launched, allowing for a crediting mechanism grounded on CER use, shortly after other countries followed suit, creating not only substantial demand for carbon offsets but enabling the development of funding alternatives to carbon projects. With the CER being an instrument tradable under regulated markets, mainstream financial markets came into play.

**PHASE 2:
CARBON MARKET 1.0 – SCALING UP**

The launch of the EU ETS in 2005 led to a surge in demand for carbon offsets, and the market started to expand rapidly. The fourth quarter of 2005 saw more validation processes start than the market had ever recorded historically, and only two years later, in 2007, the 1000th validation started. The World Bank and other institutions played a pivotal role in funding and supporting carbon projects worldwide and even a group of project developers had their organisations listed at European stock exchanges.

However, this growth phase also had its challenges.

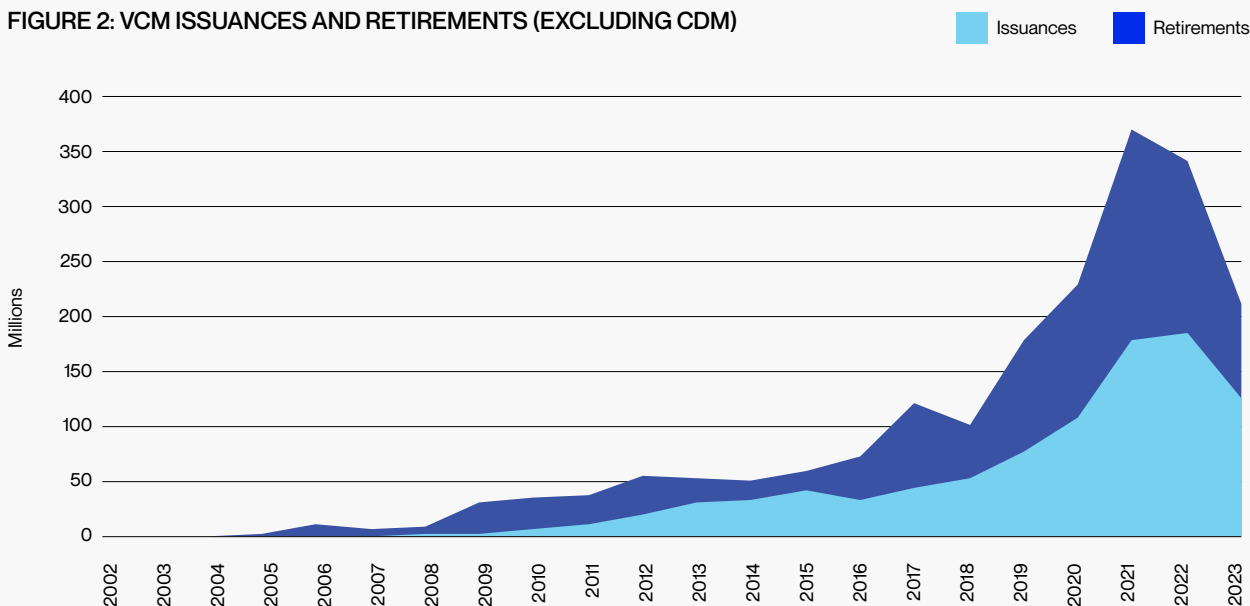
The quality of projects came under scrutiny, and the CDM Executive Board reacted strongly, suspending auditors who at the time were responsible for 80% of validations and verifications, bringing the system to a halt. The CDM Board also tightened its oversight and improved governance systems, and between 2009 and 2010 the number of rejected projects equalled historically rejected projects. But this period of turmoil ultimately resulted in a stronger CDM and a more mature market with clearer guidelines for moving forward, increasing the oversight of the auditors in particular.

**PHASE 3:
THE FIRST CRISIS**

The first crisis in the carbon market began in 2009 and as a consequence of the beginning of the Kyoto Protocol’s shortfall, with Parties abandoning the treaty and ultimately were not able to agree on the continuation of the scheme at the UN climate talks in Copenhagen. The 2011 Fukushima nuclear disaster and Japan’s subsequent withdrawal further disrupted the landscape. The global financial crisis that began in 2007 and subsequent recession compounded these challenges, with reduced demand for carbon offsets causing a drop in prices and a decrease in market participation – there was a more-than-elevenfold reduction in the number of registered projects between 2013/2014 compared with the two previous years.

To counter these issues, efforts were made to broaden the geographical scope of carbon projects, promote new approaches and create

FIGURE 2: VCM ISSUANCES AND RETIREMENTS (EXCLUDING CDM)



new mechanisms, such as the now-famous Warsaw Framework for REDD+ adopted at the 2013 climate talks in the Polish city. The voluntary carbon market also gained momentum during this phase.

**PHASE 4:
THE EVOLUTION AND REVOLUTION**

The adoption of the Paris Agreement in 2015 marked a significant shift in the climate governance agenda, with non-state actors being called into action, countries facing bigger responsibilities and flexibility via the Nationally Determined Contribution (NDC) process and the persistence of carbon markets in the agenda, with the international community establishing Article 6. It was also in 2015 that the UN's Sustainable Development Goals were established and started to provide a framework to assess, report and drive sustainable development contributions.

With the emergence of an ever more polycentric climate governance, we saw the emergence of concepts like NDCs, reporting frameworks, best practices such as the Science-Based Targets Initiative and the (re)consolidation of nature-based interventions with an ever more incorporation of co-benefits within project development cycle. The voluntary market continued to grow, and a new landscape emerged, emphasising sustainability and broader socioeconomic benefits with carbon project activities.

**PHASE 5:
CARBON MARKETS 2.0 – SCALING UP
(AGAIN!)**

The period from 2019 onwards saw a surge in voluntary carbon pledges around net-zero and carbon neutrality claims and other creative ideas for using offsets. This phase was primarily centred around nature-based solutions and community-based projects. However, this phase also witnessed a lack of governance, with no clear UN leadership and an uncontrolled growth of projects that the voluntary carbon programmes were not able (or responsible) to address. Technology, including blockchain and tokenisation, played a significant role in simplifying project development and trading. The market saw a resurgence of new entrants, with a focus on charismatic, but sometimes questionable, projects.

Diverse carbon registries and programmes emerged, leading to a race to the bottom in terms of project quality and additionality. In response, and not so long ago, the market attempted self-regulation through initiatives like the ICVCM, the VCMI and the emergence of carbon project rating agencies. Projects increasingly incorporated extra-carbon elements, such as co-benefits, into their designs, with the market requiring additional co-benefits certification as a prerequisite for premium carbon credit prices.

THE LANDSCAPE IS CONSTANTLY EVOLVING TO PROVIDE INNOVATIVE SOLUTIONS TOWARDS A LOW-CARBON ECONOMY

THE LAUNCH OF THE EU ETS IN 2005 LED TO A SURGE IN DEMAND FOR CARBON OFFSETS, AND THE MARKET STARTED TO EXPAND RAPIDLY

PHASE 6 (OR 5.1): FOUNDATION TO SCALE

The introduction of the Article 6 Rulebook at the Glasgow climate talks in 2021 emphasised the need for governmental engagement in carbon markets. With over 75% of countries indicating that they will rely on Article 6 mechanisms to achieve short or long-term NDC objectives, projects are now expected to be aligned/go beyond the host country's NDC, and this changed everything once again. Sustainable development has become a core requirement alongside emissions reductions, elevating the political relevance of carbon markets. Project development does not happen, anymore, in a political vacuum nor without clear and relevant sustainable development positive impact.

While the market saw the uncontrolled emergence of new actors, the ability to deliver technically robust and resilient projects did not expand at the same pace. It would be too cliché to say that climate action cannot wait but, in this spirit, and even if Article 6 rules are not yet fully defined, there is a group of countries, multilateral organisations and project developers proactively seeking to develop partnerships and international frameworks to allow cooperation between countries. Today, there are over 60 of such partnerships and every week there is news about new agreements.

The evolution of emission reduction project design and implementation has been marked by significant milestones, challenges, and transformations. From its humble beginnings as voluntary initiatives to the present-day landscape shaped by international agreements and technological advancements, the carbon market has come a long way and adjusted itself to incorporate criticism, new technologies, methodologies,

innovations on the project cycle and new stakeholders and concerns. It is clear that since the projects in Sabah, Malaysia in 1991, the carbon market has evolved to support climate action and mobilise climate finance towards mitigation activities. This process does not end here, and it is our responsibility as project developers to ensure high-quality projects, aligned with domestic policies and with robust checks and balances, to avoid initiatives that may undermine not only the carbon market, but private sector climate action on a broader sense.

BIOGRAPHIES

Pedro Carvalho has over 10 years of experience in complex market regulation, has an LL.M. for Inspec (Brazil) and has worked at the Governance Branch of the UN Environment Programme in policy and governance. At ecosecurities, he is responsible for leading the assessment of carbon market regulations, market dynamics as well as carbon standards with the aim of providing any given intervention with the best possible market possibilities. Pedro holds a B.A. in Law from PUC/SP (Brazil) and Master in Climate and Energy Governance from the University of St. Gallen (Switzerland).

Alexis Massot is a Carbon Policy Associate with a background in environmental services, specialising in carbon markets and emissions reduction projects. He has a proven track record in managing stakeholder relations, developing financial models, and leading policy research for projects across multiple countries. With a Master's degree in Global Political Economy and academic background in International Relations, Alexis has a deep understanding of carbon policy and international regulations.



THE ADOPTION OF THE PARIS AGREEMENT IN 2015 MARKED A SIGNIFICANT SHIFT IN THE CLIMATE GOVERNANCE AGENDA

A YEAR IN REVIEW

THE TEAM AT CARBON PULSE WRAPS UP KEY DEVELOPMENTS IN 2023 FROM AROUND THE WORLD

INTERNATIONAL MARKETS

It was a big year for international markets, with the rules around crediting carbon projects under Article 6.4 of the Paris Agreement beginning to take shape. The Supervisory Body, mandated to guide this process, finalised its methodological recommendations in November after two years of intense discussion, which will be scrutinised by national negotiators at year-end COP28 UN climate negotiations in Dubai.

Key developments included guidelines for ensuring the ambition of projects aligns with the Paris Agreement, ensuring additionality, permanence, and leakage does not occur, and how and which Clean Development Mechanism activities may transition to the new era, as well as including removals for the first time in a UN crediting mechanism. Actual crediting is not however, expected until 2025.

On Article 6.2, the text governing rules of the international trade of mitigation outcomes, several countries signed agreements for future transactions, with leading buyer nations including Singapore and Switzerland, and Ghana and Senegal among the most active on the supply side. These units will need to be correspondingly adjusted, meaning host countries do not also count them towards their national climate accounting under the Paris Agreement.

The ICE exchange also saw its first trades in futures designed to be compliant with Phase 1 of the UN aviation offsetting scheme, CORSIA, which include correspondingly adjusted credits. The physically-delivered contracts were launched in October and intended for use during the first voluntary phase of CORSIA covering the 2024-26 period. The second, compliance phase then begins from 2027-2035.

On the voluntary carbon market (VCM), a series of negative media articles accusing standards of historically overcrediting offset activities, as well as claims of fraudulent practice and human rights abuses associated with some projects weakened demand. Buyers retreated

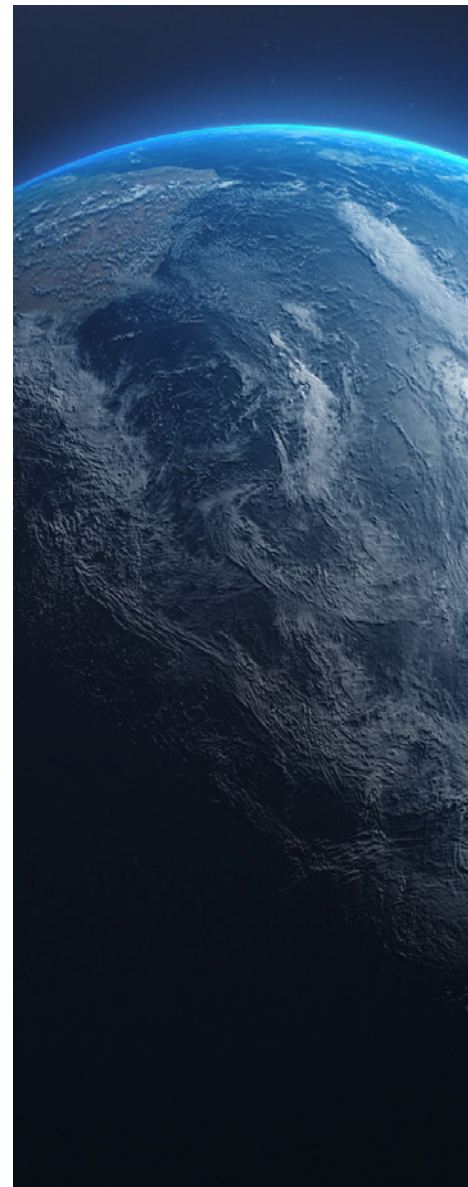
due to fears of reputational risk associated with using voluntary credits. Prices of standardised nature-based credits crashed to below \$1 in 2023, from above \$10 in the second half of 2022, with REDD+ projects facing the brunt of the early criticism in the media. Other units also suffered a severe devaluation.

In order to clean up the image of the market, as well as drive further integrity across all stakeholders, initiatives such as the ICVCM and the VCMi issued guidelines aiming to establish a threshold of quality and best practice respectively for suppliers and buyers of voluntary carbon credits. The ICVCM is due to issue its first integrity-tagged carbon credits in the first quarter of 2024.

An area of the VCM that saw strong growth both in terms of funding and attention was 'engineered' or 'durable' removals, with direct air capture (DAC) in particular grabbing headlines as some of the world's largest companies piled millions of dollars into pre-purchase agreements. These include the buyers' club Frontier, backed by JPMorgan Chase, Stripe, and Alphabet, which launched in 2023, signing several offtake deals with DAC and bioenergy with capture and storage startups as it targets spending \$1 billion on removals by 2030.

Climate finance, or lack of it, played a key role on the diplomatic scene in 2023, with several high-level summits organised, such as that by France in June, to push for reform of how funding is channelled from rich to developing countries. Suggestions include reform of multilateral development banks such as the World Bank, debt relief, and new forms of carbon pricing. Tensions also flared at UN events, hampering progress during negotiations at the intersessional summit held in Bonn, with emerging economies lamenting the fact that developed governments still had not formally met a \$100 billion climate finance pledge, due in 2020 – although reports in mid-November suggested this had finally been fulfilled.

IT WAS A BIG YEAR FOR INTERNATIONAL MARKETS, WITH THE RULES AROUND CREDITING CARBON PROJECTS UNDER ARTICLE 6.4 OF THE PARIS AGREEMENT BEGINNING TO TAKE SHAPE



THE US HAS SEEN A NEW CARBON MARKET LAUNCH IN 2023, ALBEIT WITH TEETHING TROUBLES, ANOTHER UNDER CONSTRUCTION, WHILE EXISTING CAP-AND-TRADE SYSTEMS UNDERGO REGULATORY REVIEW



EMEA

EU carbon prices initially rallied, reaching their highest ever settlement above €100/tonne in February. This was largely driven by speculative trading and restored confidence in the European economy having survived the winter with its gas supply intact, in the wake of the energy crisis brought on by Russia's invasion of Ukraine in 2022.

But benchmark EUA prices trended lower over the second half of 2023, as demand from heavy industry waned, with some facilities having shuttered due to extreme gas costs. A mild start to winter also pressured demand for fossil use, and therefore carbon permits.

Funds recorded their highest ever short position in the EU ETS in November as the benchmark price settled as low as €75 in the same month, reflecting a bearish fundamental outlook. Power sector emissions, the largest source covered by the EU ETS, significantly declined over the year, while low-carbon supply such as nuclear, hydro, and renewables increased year-on-year.

On the policy side, "Fit for 55" reforms to the EU ETS were ratified, after provisional deals had been reached in the second half of 2022. These include expanding the market's scope to much of international shipping from 2024, phasing out free allowances this decade for certain sectors such as aviation, and expanding its ambition to align with a broader emissions reduction target of at least by 2030, relative to 1990 levels.

The much-awaited carbon border adjustment mechanism (CBAM) also entered into force in October, during which importers are obliged to monitor and report to Brussels the emissions of covered goods brought into the EU, with levies to then be paid from 2026. The first report is due at the end of January, relating to the final quarter of 2023. Several countries, India among the most outspoken, have threatened to file complaints to international bodies such as the World Trade Organization.

To address industry concerns with the current and expected future cost of production amid the cost of energy and climate reforms, the EU introduced its Net Zero Industrial Act (NZIA), seeking to set 2030 targets to produce 'strategically important' clean technologies domestically, deploy carbon capture, and laying out a plan to further support green hydrogen.

In the UK, which has not yet introduced a CBAM or enacted reforms to its carbon market, benchmark prices slumped to around half the value of that of the EU, just a few years after having left the wider EU ETS due to Brexit.

The benchmark price spread between both markets ballooned to as much as a €44/tonne UK discount at the end of September, as UK allowances slumped below £40/tonne in the

same month after trading above £85/tonne the previous January.

This came largely in the wake of published policy documents outlining the trajectory for the market, which outlined that around 53 Mt of additional permits would be added to supply auctions through 2027. The UK government also confirmed it was working on an equivalent to the EU's supply balancing market stability reserve for its ETS, though details on this remain vague.

Outside of Europe, several countries made significant developments on carbon market development. Turkey's government signalled that its long-awaited ETS should be introduced in 2024, while many African governments are developing or have already launched frameworks to prepare to engage with international carbon markets, such as the UN's Article 6. These include, Zambia, Rwanda, Kenya, Ghana, Mozambique, and Zimbabwe, as well as several others.

AMERICAS

The US has seen a new carbon market launch in 2023, albeit with teething troubles, another under construction, while existing cap-and-trade systems undergo regulatory review. Meanwhile, federal developments on climate policy are limited given the Republicans' narrow majority in the House, dampening prospects for further measures to complement the \$370 bln of clean energy support laid out in the 2022 Inflation Reduction Act (IRA).

Washington state launched its cap-and-invest carbon market at the start of the year. But its Q2 and Q3 allowance auctions triggered reserve sales, sparking emergency rulemaking to calm soaring permit prices in the nascent, undersupplied market. By November, Washington officials completed preliminary analysis, deciding to pursue linkage with the WCI market, which could likely take until the end of 2025 or early 2026, provided existing participants California and Quebec agree to the tie-up.

California's Air Resources Board (ARB) commenced a public process to evaluate potential changes to emissions caps, cost containment measures, and market rules of the state's WCI cap-and-trade programme. Formal rulemaking is expected to begin in 2024 to align the scheme with the state's goal to cut emissions to 48% below 1990 levels by 2030. Allowance prices have surged to new records after every public workshop meeting as the regulator models allowance removals.

Nearly 16 months after a preliminary injunction, Pennsylvania's courts halted the state's regulatory-installed RGGI linkage, ruling that it constitutes an illegal tax, as levying taxes is under the purview of the legislature. Meanwhile, Virginia readies its year-end exit from RGGI after Republican Governor Glenn Youngkin cancelled

the programme via regulatory means, circumventing the legislature. Virginia courts dismissed three of four green groups legal challenges' to the RGGI repeal. In the secondary market, RGGI allowance prices have traded past the Cost Containment Reserve's trigger price as the Third Program Review progresses.

New York began its economy-wide cap-and-invest rulemaking, with draft regulations expected 1 January 2024 and completed in 2024, followed by programme launch in 2025.

To the north, Canada's federal Liberal government's carbon pricing carve-out for home heating oil in the fall triggered a political storm across provinces, uniting resistance from parties typically on differing sides of climate policy. The constitutionality of Canada's carbon tax and its future have once again become a question mark.

In the south, Mexico's federal ETS system has been delayed to sometime in 2024, while eight states will operate carbon taxes once the latest state of Colima implements its CO₂ levy next year. A regulated carbon market in Brazil awaits a crucial legislative vote in the Chamber of Deputies having cleared the Senate as President Lula da Silva's government signalled its intention to pass ETS legislation prior to COP28 and strengthened its NDC. The country hosts the COP30 UN Summit in 2025. Argentina published its national carbon market strategy mentioning both compliance and voluntary carbon markets, including Paris Article 6.8 non-market approaches to advance mitigation.

APAC

Over 2023, South and Southeast Asia saw steady process in establishing domestic carbon pricing mechanisms. India took a major step in October, when it released draft regulations for a carbon intensity-based mandatory scheme, expected to be implemented for most energy intensive sectors from 2026. Malaysia and Indonesia both launched domestic voluntary carbon trading exchanges, though the latter has seen some delays in implementing an ETS for its coal-fired power plants.

Thailand, Pakistan, Vietnam, Brunei, and Taiwan are all at various stages of developing do-

mestic policies, with Thailand and Vietnam head of the pack.

After almost seven years of hibernation, China has almost completed the process of relaunching its domestic offsetting scheme, but it is expected to take time until credits can be supplied to buyers in the national ETS, who faced record high allowance prices above \$10 as the 2021 and 2022 compliance deadline approached in late 2023.

Early in the year, Japan adopted legislation that will see its voluntary GX League scheme take a step towards becoming a more traditional ETS from 2026, but will not complete the transition until 2032. The Tokyo Stock Exchange launched trading of J-Credits in October.

Australia finalised reforms of its Safeguard Mechanism, which will see participants have to cut their carbon output from next year. The government is still busy applying recommended changes to its ACCU scheme from an independent review after criticism was raised that the programme is over-crediting certain projects.

In New Zealand, a change in government following the October election put an end to the previous Labour party administration's considerations of separating forestry from the rest of the ETS. The presumptive new conservative government has said the ETS will continue as is, and a decision on a pricing mechanism for agriculture has been put on hold.

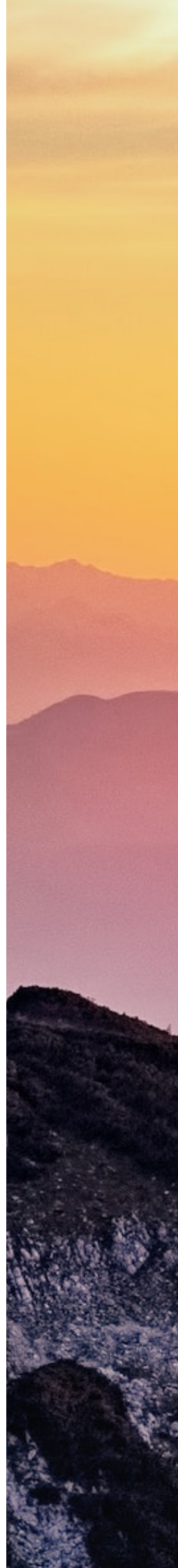
Singapore has now signed Article 6 MoUs with more than a dozen countries, to ensure its domestic emitters will have access to credits that they will be able to use towards compliance with the city state's carbon tax system from next year.

Japan, too, has added a number of partner countries to its Joint Crediting Mechanism (JCM) this year, including PNG, UAE, and Kazakhstan. It now has 28 JCM partners. South Korea has signed its first Article 6 partnership and is engaging with the private sector to secure projects abroad, initially in Asia.

India, meanwhile, in February listed specific sectors that will be allowed to sell credits under Article 6, with Pakistan expected to follow a similar strategy with an announcement to be made before the end of the year.



**AFTER ALMOST SEVEN YEARS OF HIBERNATION,
CHINA HAS ALMOST COMPLETED THE PROCESS OF
RELAUNCHING ITS DOMESTIC OFFSETTING SCHEME**





CLIMATE FINANCE, OR LACK
OF IT, PLAYED A KEY ROLE ON THE
DIPLOMATIC SCENE IN 2023

GETTING TO NET-ZERO EMISSIONS IN EUROPE

DAVID HONE ARGUES THE CASE FOR INCLUDING REMOVALS IN THE EU ETS

THE PRIMARY TOOL DRIVING MITIGATION ACTIONS ACROSS THE EU AND SETTING THE AGENDA FOR EU DECARBONISATION IS THE EU EMISSIONS TRADING SYSTEM (ETS). WHEN THE SYSTEM FIRST STARTED IN 2005, IT COVERED THE MAJOR EMITTERS, NAMELY POWER GENERATION AND INDUSTRIAL FACILITIES, BUT INTRA-EU AVIATION HAS BEEN ADDED AND MUCH MORE IS TO COME AS THE SYSTEM EXPANDS INTO MARINE AND OTHER SECTORS. BUT IS THE EU ETS FIT FOR PURPOSE TO COMPLETE THE JOURNEY TO NET-ZERO EMISSIONS IN 2050 AND BEYOND AS A POTENTIAL NEGATIVE EMISSION DRIVER – IE, NET DRAWDOWN OF CARBON DIOXIDE FROM THE ATMOSPHERE?

One way to understand what is needed is to use scenarios to help visualise the future. The Shell scenario team has been applying this discipline for over 50 years and, in 2023, released the most recent incarnation of their deliberations, The Energy Security Scenarios.

The two new scenarios, **Sky 2050** and **Archipelagos**, describe the tension that is playing out between the promises made by world leaders at COP26 in November 2021, when there was a collective agreement to limit global warming to 1.5°C above pre-industrial levels, and the energy security situation they were confronted with three months later when Russia invaded Ukraine.

- In **Archipelagos**, the security mindset that is dominant today becomes entrenched worldwide. Global sentiment shifts away from managing emissions and towards energy security. Despite this shift, the drive for energy security still includes the greater use of low-carbon technologies but not emission management technologies such as carbon capture and storage. These dynamics translate into global emissions peaking in the 2020s and falling from the mid-2030s but net-zero emissions remains a long way off.
- In **Sky 2050**, long-term climate security is the primary anchor, with specific targets to reach net zero by 2050 and ultimately bring the global average surface temperature rise to 1.5°C by 2100. The war in Ukraine translates into gradual progress in the early 2020s, but that progress gains momentum towards the 2030s. This happens as the need to deliver low-carbon energy infrastructure takes on an urgency of its own, driven largely by security and price concerns. While progress is initially difficult to see, emissions start to fall from 2025 and, by 2040, the goal of net-zero emissions is clearly in sight. The energy system rapidly transforms.

IS THE EU ETS FIT FOR PURPOSE TO COMPLETE THE JOURNEY TO NET-ZERO EMISSIONS AND BEYOND AS A POTENTIAL NEGATIVE EMISSION DRIVER?

Underpinning both scenarios is a framework of archetype behaviours by countries in response to energy concerns. The EU falls largely into an archetype called Green Dream, where the focus is on shifting rapidly away from fossil fuels and even reducing energy demand. Government takes a strong role in crafting the direction of travel. By contrast, North America sits with other major resource holders in a group known as Innovation Wins, where long term incentive structures unlock a stream of innovation to allow the energy system to find a different way forward. Technologies such as carbon capture and storage flourish.

Both the EU and North America head towards net-zero emissions, but it is the Americans who get there first in Sky 2050. Perhaps more importantly, of the two it is the Innovation Wins countries which deliver a much bigger share of the global need for negative emissions after 2050, because they develop and embrace geological storage and technologies such as direct air capture (in Sky 2050). Negative emissions are the key to managing overall warming by 2100 and open up the possibility for climate restoration in the 22nd century.

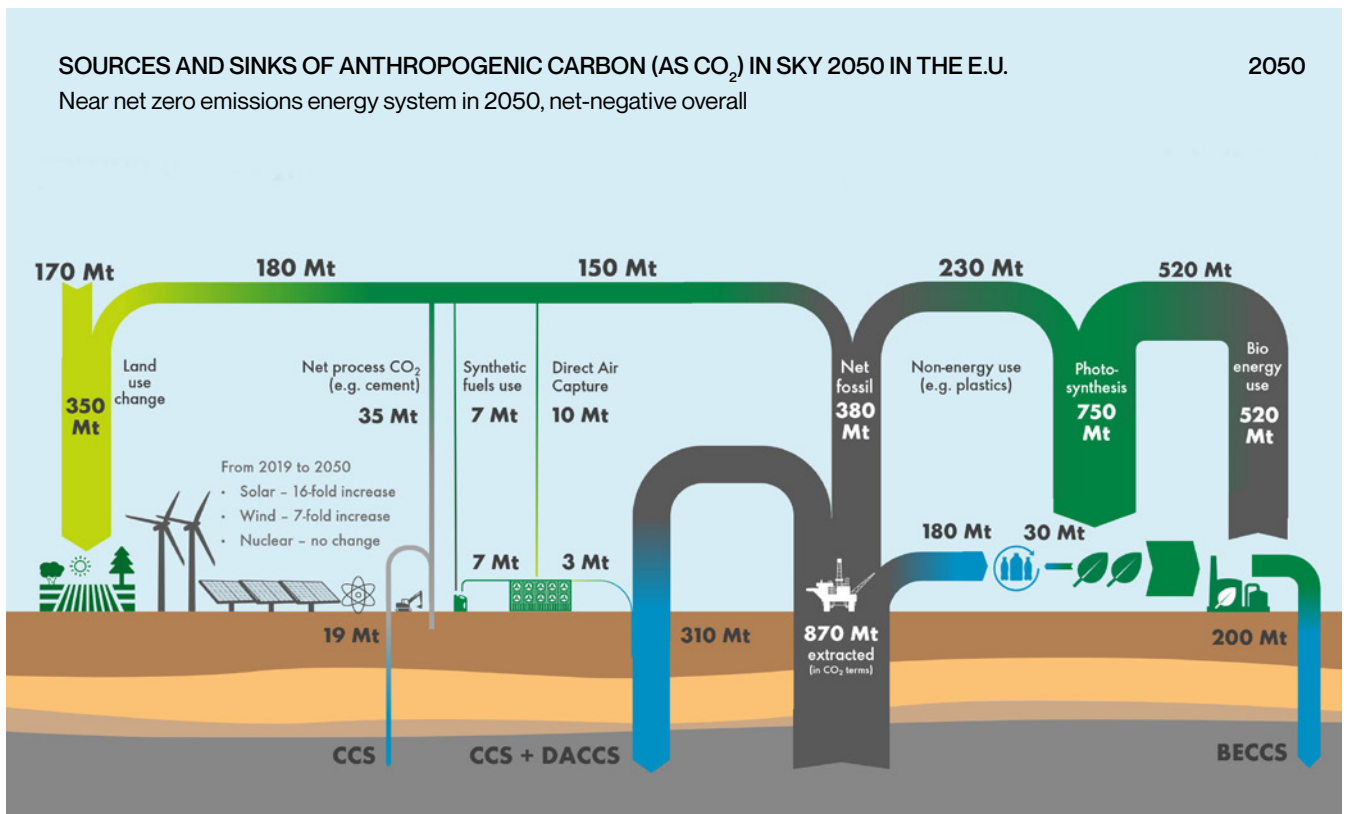
By 2050 in the Sky 2050 scenario, for a similar population, North America has deployed twice the CCS capacity of the EU and has seven times as much direct air capture in operation. By

2100 the EU only has as much direct air capture as North America does in 2050, whereas North America is heading towards 1 Gt of capture capacity.

As we think about this difference today, one telling sign of things to come is the structure of the EU ETS. As it currently stands in late 2023, there is no mechanism within it to deliver the 'net' in net-zero emissions. The system seems to be operating on the presumption that the EU will reach zero emissions in 2050, primarily through substitution away from fossil fuels, or in limited cases by direct application of carbon capture and storage (CCS) at an industrial site. Although the EU is only now starting to construct a verification process for the removal of carbon dioxide from the atmosphere, there are no viable projects and even if there were there is no mechanism in place to set these removals against ongoing emissions, such as from the aviation sector. By contrast, the US Inflation Reduction Act (IRA) is drawing in hundreds of billions of dollars of investment, with carbon dioxide removal projects heavily featured.

Looking at the Sky 2050 scenario for the year 2050, we get a clear view of what is necessary for that view of the future to reach the 2050 goal of net-zero emissions in Europe.

THE SYSTEM SEEMS TO BE OPERATING ON THE PRESUMPTION THAT THE EU WILL REACH ZERO EMISSIONS IN 2050





THE PROBLEM AT HAND COMES BACK TO
IDEOLOGY ABOUT THE FUTURE AND AN
ETS NOT DESIGNED TO DELIVER NET-ZERO
EMISSIONS

In 2050, fossil fuel use is far from over, albeit down about 70% from current levels. And the direct application of CCS isn't sufficient to manage the remaining emissions. Rather, like much of the rest of the world in Sky 2050, the EU attains its goal through a complex balance between emissions, industrial carbon dioxide removals via direct air capture with storage (DACCS) or bioenergy processing paired with CCS (BECCS) and land use change. As the century progresses past 2050 fossil fuel use does decline to near zero and the EU is left with an industrial base capable of net removal of carbon dioxide from the atmosphere.

The scale of these removal technologies is also profound – they are measured in the hundreds of millions of tonnes per year, far from the handful of CCS projects currently under development in the EU which might deliver 10-20 million tonnes per year of CCS capacity this decade.

The problem at hand comes back to ideology about the future and an ETS not designed to deliver net-zero emissions. The simple solution is to change the design of the EU ETS and allow removals into the system as an alternative to EU allowances for compliance. A removal would be generated in the EU through an industrial or land use project that has been verified under the structure that the EU is currently putting in place for voluntary removals.

It goes almost without saying that a voluntary market and a certification process are no match for the \$180 per tonne CO₂ on offer in the USA for DACCS under the IRA. In the EU, there is the Innovation Fund to help drive technologies such as DACCS, but it isn't operating on the same scale as the IRA. The Innovation Fund could provide €40 billion of support over 2020-30 for the commercial demonstration of innovative low-carbon technologies, whereas the IRA might head towards \$1 trillion by the time it is done. And the IRA has a specific and clearly defined incentive for carbon dioxide removal, which isn't the case for the EU Innovation Fund, although a DACCS project would be considered within the framework.

The EU could replicate the US push on removals, and go further, through changes to the EU ETS. Allowing removal units for compliance is the first step, but there could also be consideration to forcing these into the system through an obligation to surrender some removal units for overall compliance. It is quite possible that, without removals, the EU ETS becomes infeasible at some point in the 2040s, meaning that the only route open for compliance would be some cessation of industrial activity such that emissions fall. This also points to the need for their inclusion at a much earlier point in time, ideally prior to 2030 to allow capacity to be created for the 2040s.

Should the EU not act promptly on this issue it's not difficult to guess where the DACCS and BECCS projects will end up and which country will benefit from the investment, and who will get to net-zero emissions first.

In the USA, at least, innovation would win!

BIOGRAPHY

David Hone works for Shell International Ltd. and is the Chief Climate Change Adviser in the Shell Scenarios team.

He joined Shell in 1980 after graduating as a Chemical Engineer from the University of Adelaide in South Australia. He initially worked for Shell as a refinery engineer in Australia and The Netherlands, before becoming the supply economist at the Shell refinery in Sydney. In 1989 David transferred to London to work as an oil trader in Shell Trading and held a number of senior positions in that organisation until 2001. In that year David took up the role of Group Climate Change Adviser.

David is on the Board of the Washington based Centre for Climate and Energy Solutions (C2ES) and the Board of the Global Carbon Capture and Storage Institute (GCCSI) in Melbourne, Australia. He was Chairman of IETA from 2011-2013 and a Board member up until 2023.

David posts regular stories on his energy & climate change blog, which can be found at <http://blogs.shell.com/>. He is the author of a 2017 book on climate change, 'Putting the Genie Back: Solving the Climate and Energy Dilemma'.

Note: Shell Scenarios are not predictions or expectations of what will happen, or what will probably happen. They are not expressions of Shell's strategy, and they are not Shell's business plan; they are one of the many inputs used by Shell to stretch thinking whilst making decisions. Read more in the Definitions and Cautionary note. Scenarios are informed by data, constructed using models and contain insights from leading experts in the relevant fields. Ultimately, for all readers, scenarios are intended as an aid to making better decisions. They stretch minds, broaden horizons and explore assumptions.

TARGETING INDUSTRIAL DECARBONISATION

ELISA DE WIT AND DEWY SACAYAN LAY OUT THE EVOLVING COMPLIANCE LANDSCAPE IN AUSTRALIA AND REFORMS TO ITS SAFEGUARD MECHANISM

THE LABOR GOVERNMENT'S FIRST STEP FOLLOWING ITS SUCCESS AT THE FEDERAL ELECTION IN MAY 2022 WAS TO LIFT AUSTRALIA'S 2030 EMISSIONS REDUCTION COMMITMENT UNDER THE PARIS AGREEMENT FROM 26-28% TO 43% AND COMMIT TO NET ZERO BY 2050. THESE COMMITMENTS WERE THEN ENshrined IN LEGISLATION THROUGH THE ENACTMENT OF THE CLIMATE CHANGE ACT 2022 IN SEPTEMBER 2022.

One of Labor's primary tools to achieve the 2030 target is the Safeguard Mechanism. The Safeguard Mechanism is enshrined within the National Greenhouse and Energy Reporting Act 2007 (the NGER Act) and the National Greenhouse and Energy Reporting (Safeguard Mechanism) Rule 2015 (Safeguard Rule).

The Safeguard Mechanism was initially introduced by the former Coalition Government in 2015 and commenced operation on 1 July 2016; however its design meant that it did not play a significant role in driving down Australia's emissions. Under legislative reforms passed by Labor in March 2023, the Safeguard Mechanism will now have a more influential role to play in assisting Australia to meet its 2030 target.

OVERVIEW OF THE SAFEGUARD MECHANISM

The overall premise of the Safeguard Mechanism is that high-emitting facilities (facilities emitting over 100,000 tonnes of Scope 1 CO₂e per year) are allocated a baseline, and they are required to keep their Scope 1 emissions below this baseline. If their actual emissions in a financial year exceed their baseline, then they can purchase and surrender Australian Carbon Credit Units (ACCUs) to 'offset' that exceedance.

Baselines for covered facilities were originally set based on historical emissions levels, which for facilities with five years of NGER reporting data, were calculated based on the his-

toric high point of emissions between 2009-10 and 2013-14. In certain instances, such as if a facility did not have sufficient historical emissions data to be given a reported baseline or if its historical emissions did not reflect its future emissions due to changes in business operations, a facility could seek approval of a more tailored baseline from the Clean Energy Regulator. There were also several flexible compliance options offered, including multi-year compliance periods to 'smooth' emissions exceedances over a longer timeframe. Prior to the amendments legislated by Labor, the scheme had been transitioning away from fixed baselines to production-adjusted baselines.

Under Labor's reforms, baselines for the covered facilities will be 're-set' and the scheme will operate as a "baseline-and-credit" system, in that facilities that can reduce their actual emissions below their allocated baseline will be able to generate credits. These credits can then be used for compliance purposes in later years, or sold to other covered facilities.

The Safeguard Mechanism reforms commenced on 1 July 2023.

TIGHTENING BASELINES

Under the reforms, baselines will decline predictably and gradually over time from 1 July 2023. The decline rate for the baselines is intended to ensure that by 2030, total net emissions from the Safeguard facilities do not exceed 100 million tonnes of CO₂e.

UNDER LEGISLATIVE REFORMS PASSED IN MARCH 2023, THE SAFEGUARD MECHANISM WILL NOW HAVE A MORE INFLUENTIAL ROLE IN ASSISTING AUSTRALIA TO MEET ITS 2030 TARGET

The standard decline rate will be set at 4.9% each year up to 2030. It will apply to all existing and new Safeguard facilities unless a differential trade-exposed baseline adjusted facility rate has been approved for a facility (see further below).

The baselines will be further tightened post-2030 through predictable five-year blocks according to Australia’s Nationally Determined Contribution under the Paris Agreement. The Climate Change Authority will advise on the periodic baselines and will provide an indicative decline rate to 2050 that aligns with progressing Australia’s goal to achieve net-zero emissions by 2050.

ENSURING COMPETITIVENESS

Existing Safeguard facilities will be required to use published, government-determined production values for their baselines. Initially, existing facilities will use baselines that are weighted towards the use of site-specific emissions intensity values, and will later transition to industry-average emissions intensity values by 2030 using the ratios in Table 1.

Baselines for new facilities will be set using international best practice levels, adapted for Australia’s emissions reduction targets, to take into account the ability to use new technology and incorporate best practice emissions management. These baselines will also decline over time at the same rate as other existing Safeguard facilities to balance competition.

CREDITING AND TRADING

A key component of the reforms is the ability for Safeguard facilities to generate credits and trade them with others. The National Greenhouse and Energy Reporting (Safeguard Mechanism) Amendment (Reform) Rules 2023 (Amendment Rules) legislate a new type of credit known as Safeguard Mechanism Credits (SMCs).

Initially, there will be flexibility allowed in relation to the use of SMCs. Up until 2030, Safeguard facilities are allowed unlimited banking of SMCs so that they can use the credits for compliance in any year, irrespective of when they were issued. Additionally, up until 2030, Safeguard facilities that may need more time to implement onsite abatement can borrow up to 10% of their baseline. A reduced interest rate of 2% will apply to the first two years of the scheme, with it being increased to 10% thereafter.

Safeguard facilities can also purchase and surrender ACCUs to comply with their obligations. However, specific amendments were included in the legislative package to address concerns raised by the Greens that Safeguard facilities could essentially delay their decarbonisation efforts by paying to “offset” their emissions. Accordingly, if a facility surrenders an amount of ACCUs that is greater than 30% of its baseline, it must submit a statement to the Clean Energy Regulator explaining why it cannot reduce its direct emissions on site. These statements will be made public to provide transparency about the action Safeguard facilities are taking to reduce emissions at source.

Historically, projects to generate ACCUs could be undertaken at a Safeguard facility. However, as a result of the enactment of the Carbon Credits (Carbon Farming Initiative) Amendment Rules 2023 (CFI Amendment Rules), it is no longer possible to undertake a project at a Safeguard facility to reduce the covered emissions (ie, Scope 1 emissions). It is also no longer possible for projects at Safeguard facilities to be the subject of Carbon Abatement Contracts with the Clean Energy Regulator.

Another key component of the CFI Amendment Rules was the inclusion of a cost containment measure, whereby ACCUs can be purchased from the Clean Energy Regulator for compliance purposes at a maximum price of \$75 apiece for the first compliance year. This cap will increase on an annual basis by the consumer price index plus 2%.

A KEY COMPONENT OF THE REFORMS IS THE ABILITY FOR SAFEGUARD FACILITIES TO GENERATE CREDITS AND TRADE THEM WITH OTHERS

TABLE 1

	2023-24	2024-25	2025-26	2026-27	2027-28	2028-29	2029-30
Industry Average: Site Specific	10:90	20:80	30:70	40:60	60:40	80:20	100:0

Production value ratios to 2030 (Source: Department of Climate Change, Energy, the Environment and Water, Safeguard Mechanism Reforms, May 2023)

ADDITIONAL SUPPORT FOR EMISSIONS-INTENSIVE, TRADE-EXPOSED FACILITIES

In addition to price certainty, there is further support available for Safeguard facilities that fall under the category of emissions-intensive, trade-exposed facilities (EITE facilities). These comprise facilities whose main production variable is exposed to international competition and face an elevated risk of carbon leakage, such as producing steel, aluminium and cement.

Firstly, EITE facilities can secure assistance from the government under the A\$1.9 billion (US\$1.2 billion) Powering the Regions Fund (PRF). EITE facilities can apply for grants from the PRF to invest in low emissions technology. Within the PRF, A\$600 million has been allocated for the Safeguard Transformation Stream and an additional A\$400 million has been ring-fenced for certain key sectors, such as cement, lime, alumina and aluminium. Applications for funding from the PRF closed at the beginning of November 2023.

Secondly, EITE facilities that face an elevated risk of carbon leakage will also be able to apply for a discounted decline rate based on a scheme impact metric, which is a measure of the financial impact of the Safeguard Mechanism on a facility. The scheme impact metric is calculated as a percentage of revenue or earnings before interest and taxes (EBIT), depending on whether the EITE facility is categorised as a manufacturing or non-manufacturing facility.

The minimum discounted decline rate for trade-exposed baseline-adjusted facilities is 1% per year for manufacturing facilities and 2% per year for non-manufacturing ones. The maximum discounted decline rate is 3% per year for both manufacturing and non-manufacturing facilities. The intent behind providing an option for a discounted baseline rate is designed to help these facilities reduce their emissions over time without losing their competitive advantage.

USE OF INTERNATIONAL CREDITS

At present, the government has not authorised the use of international credits (such as those generated under voluntary offset schemes, such as Verra or Gold Standard) for

compliance purposes. The government intends to consult on whether international credits should be allowed into the scheme at a later point.

This consultation will likely build upon the Review of International Offsets undertaken by the Climate Change Authority in 2022.

CONCLUSION

Achieving Australia's interim and long-term emissions reduction targets will require a transformation of the Australian economy. However, coverage of facilities under the Safeguard Mechanism will only address around 28% of Australia's emissions. The government intends to produce sectoral plans addressing the balance of Australia's emissions sources. It is conceivable that these plans could ultimately recommend greater coverage under the Safeguard Mechanism, either through expanding the scope to different sectors or by reducing the threshold for coverage.

BIOGRAPHIES

***Elisa de Wit** is a partner in the Melbourne office of international legal practice, Norton Rose Fulbright, and heads the Australian Climate Change and Sustainability practice and the global Carbon Markets practice. She has over 30 years of legal experience and has practised in three Australian jurisdictions and the UK. Elisa is considered one of Australia's preeminent climate change lawyers and advises clients on policy, regulation and compliance issues. Elisa is the former Chair of the Carbon Market Institute, and a director of Beyond Zero Emissions and the Grampians Wimmera Mallee Water Corporation.*

***Dewy Sacayan** is an associate based in Norton Rose Fulbright's Melbourne office and practises in the areas of international and domestic climate change law. She was initially admitted as a Barrister and Solicitor in the High Court of New Zealand where she practised civil litigation and acted on judicial reviews related to NZ's Nationally Determined Contributions and transport emissions. Dewy is a former Co-Chair of Generation Zero, a youth-led climate advocacy group in New Zealand that successfully lobbied for NZ's Climate Change Response (Zero Carbon Act) Amendment Act 2019 which recognises NZ's commitments under the Paris Agreement.*



ACHIEVING AUSTRALIA'S INTERIM AND LONG-TERM EMISSIONS REDUCTION TARGETS WILL REQUIRE A TRANSFORMATION OF THE AUSTRALIAN ECONOMY

LATIN AMERICA AND THE CARIBBEAN: THE EVOLUTION OF A GROWING REGION

CARBON MARKET ACTIVITY IS ON THE RISE ACROSS LATIN AMERICA. CAMILO TRUJILLO EXPLAINS WHAT'S DRIVING THIS SURGE IN INTEREST AND HOW THESE CAN SCALE

ALTHOUGH THE LATIN AMERICA AND THE CARIBBEAN (LAC) REGION IS RESPONSIBLE FOR ONLY 7% OF GLOBAL GHG EMISSIONS, IT HAS GREAT POTENTIAL FOR CLIMATE CHANGE MITIGATION. ABOUT 22% OF GLOBAL CARBON CREDIT ISSUANCES AND 23% OF RETIREMENTS COME FROM THIS REGION. THIS CAN BE EXPLAINED, IN LARGE PART, BY ITS LARGE ENDOWMENT IN NATURAL CLIMATE SOLUTIONS (NCS).

At the same time, the Agriculture, Forestry, and Other Land Use (AFOLU) sector is the region's Achilles heel, representing 40% of total emissions, almost double the global average. Here is where the opportunity lies to shift the sector from a net emissions source to a net emissions sink. For example, investments through the voluntary carbon market in the agricultural sector could eliminate around 0.9 Gt-CO₂e, more than a third of current GHG emissions from agriculture in LAC.

Aware of the region's potential in NCS and the capacity of market instruments to attract resources that support achievement of Nationally Determined Contributions (NDCs) and generate co-benefits, governments are evaluating, developing, or implementing local regulations on carbon pricing instruments, voluntary programmes, or project development. For example, countries such as Chile, Ecuador, and Paraguay set rules this year. Likewise, Brazil, Colombia, Mexico, and Peru are in the process of issuing new regulations. Meanwhile, eight countries are involved in bilateral agreements or memoranda of understanding to develop cooperative approaches under Article 6 of the Paris Agreement.

This broad panorama has allowed the continent to have a varied range of instruments and actors involved. Each jurisdiction has particular needs and regulates or creates differentiated mechanisms, as shown in Figure 1.

FIGURE 1:
THE CARBON MARKET LANDSCAPE IN THE LAC REGION

	Allow Offsets	Offsets Not Allowed
Carbon Tax	  <small>Quetzaltenango - MX Guatemala - MX Jalisco - MX Tlaxcala - MX</small>	  <small>Estado de México - MX Durango - MX Zacatecas - MX Yucatán - MX</small>
Emissions Trading System	 <small>Quetzaltenango - MX Guatemala - MX Jalisco - MX Tlaxcala - MX</small>	
GHG Voluntary Programs		
General Regulation*		
Art.6		

* Regulation on carbon markets without specifying carbon pricing instruments.
 ** Under discussion.
 *** Carbon tax law includes the use of offsets, but it has never been regulated.

DIFFERENT TYPES OF COUNTRIES ARE ALREADY INTERACTING UNDER THE COOPERATIVE APPROACHES OF ARTICLE 6

SEVERAL DYNAMICS CAN BE IDENTIFIED FROM THE FIGURE:

- Four of the five largest economies in the region already have or are in the process of designing an ETS: Brazil, Mexico, Colombia, and Chile.
- Some countries have leveraged the development of voluntary carbon footprint measurement and compensation programmes as a first step to move towards future carbon pricing mechanisms. Likewise, this type of instrument seems attractive for countries with significant economies but not large scale, such as the cases of Ecuador, Costa Rica, and Panama.
- Different types of countries are already interacting under the cooperative approaches of Article 6, regardless of their characteristics or economic conditions.
- Coincidentally, the countries belonging to the Pacific Alliance – Chile, Colombia, Mexico, and Peru – are at the forefront, participating or aiming to participate in two, three, or four different mechanisms simultaneously.
- The active role of subnational states in Mexico implementing carbon taxes is evident, some of them including the flexibility mechanism option and others following it very closely, looking forward to implementing it.

Mexico is not the only country with subnational jurisdictions enabling demand and developing regulations or programmes to implement projects. In Brazil, the States of Amapá, Maranhão, and Tocantins have jurisdictional programmes listed in ART-TREES; Acre and Mato Grosso participate in the REDD+ for Early Movers (REM) results-based payment programme; Pará is evaluating the possibility of auctioning land for the development of carbon projects; and Pernambuco is in the process of developing new regulations for carbon markets. Provinces such as Misiones, Santa Fe, Jujuy, and Córdoba in Argentina have set rules that enable the possibility of developing regulated markets in their jurisdictions, as well as encouraging the demand and the development of projects within the framework of the voluntary market for compliance with the local mitigation measures and goals.

Like there are different types of instruments, a wide range of vehicles for developing mitigation initiatives coexist in LAC, for example, through projects, jurisdictional programmes, results-based payment programmes, concessions, or initiatives inside natural parks, as in Peru. This is consistent with the great potential for project development in the region. Of the total carbon credits issuances, 76% is to NCS projects: 52% are to REDD+, 17% to nature restoration, and 7% to jurisdictional REDD+. Considering that these types of projects typically face their challenges, that scrutiny is focused on

social and environmental integrity, and that the market continues to evolve, governments have been learning as they go, and more and more countries in the region are starting to create rules that allow for greater control and quality in the development of projects.

Thus, for example, ministries of environment or designated entities are beginning to approve mitigation initiatives, as well as eligible certification standards and validation and verification bodies. Regarding environmental integrity, some aim to generate definitions in terms of additionality, build national reference levels and quota allocations, and review monitoring reports. To ensure social integrity and adequate participation, governments have developed national interpretations of safeguards and elements on governance and fair benefit sharing. It is essential to remember that the voices, wisdom, and priorities of indigenous peoples and local communities are central to the evolution of carbon markets and the urgent transition to sustainable forest landscapes.

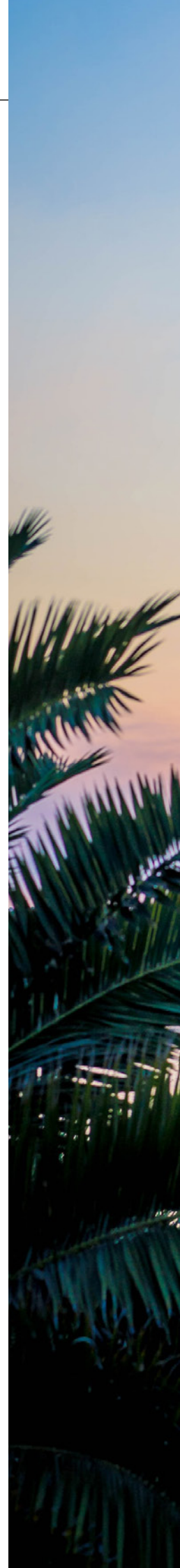
To carry out this task, the main challenges faced by countries are associated with the need for support for the design and implementation of their MRV systems, capacity building to design the institutional framework and implement the operationalisation of Article 6, and the proper design, operation, and coordination between various carbon pricing instruments in the case of countries that have more than one mechanism, either led at the central level or the central and subnational level.

Under this chapter, four elements of the evolution of the carbon market in LAC can be highlighted to consolidate it as a fundamental tool for financing a just transition in the region:

- An increasing number of countries are enabling demand and regulation for developing carbon markets.
- LAC has a wide range of instruments and types of projects according to the countries' and jurisdictions' characteristics and needs.
- Sub-national states are increasingly playing a more active role in market development.
- Several countries are focusing on generating rules to define quality and ensure control in the project's development.

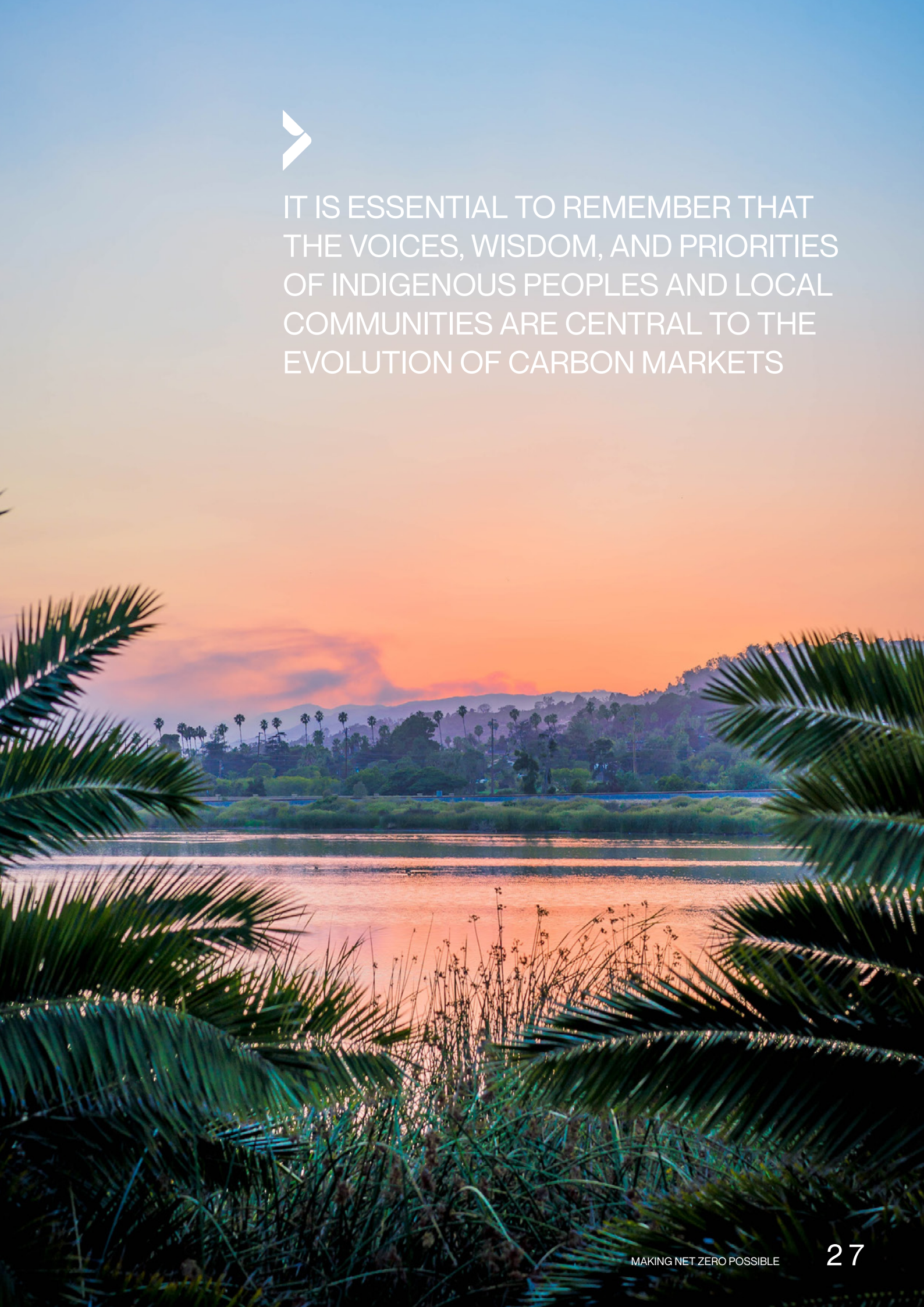
BIOGRAPHY

Camilo Trujillo. Political scientist with studies in sustainability and emissions trading. Camilo works as LAC Lead for IETA, coordinating the organisation's activities in Latin America and the Caribbean and supporting the progression of digital markets. He led the development of technological solutions for different environmental markets for over five years and has experience in corporate sustainability in the electricity sector.





IT IS ESSENTIAL TO REMEMBER THAT THE VOICES, WISDOM, AND PRIORITIES OF INDIGENOUS PEOPLES AND LOCAL COMMUNITIES ARE CENTRAL TO THE EVOLUTION OF CARBON MARKETS



ARTICLE 6: A (FLAWED) MARKET MECHANISM FOR A NEW ERA

A DESIGN FLAW WITHIN ARTICLE 6 MECHANISMS COULD WELL DETER ACCESS TO CARBON FINANCE AND THE EFFECTIVENESS OF THE MECHANISMS, ARGUES **PETER ZAMAN**

ONE OF THE KEY EFFECTS OF REPLACING THE KYOTO PROTOCOL WITH THE PARIS AGREEMENT AS THE MAIN INTERNATIONAL AGREEMENT, UNDER THE FRAMEWORK OF THE UNITED NATIONS FRAMEWORK CONVENTION ON CLIMATE CHANGE, TO ADDRESS THE CHALLENGE OF CLIMATE CHANGE IS THE REQUIREMENT FOR ALL PARTIES TO THE PARIS AGREEMENT TO CALCULATE AND REPORT THEIR GREENHOUSE GAS (GHG) EMISSIONS. FOR SOME – CHIEFLY DEVELOPED COUNTRIES – WHICH HAVE BEEN REPORTING THEIR GHG EMISSIONS FOR MORE THAN 20 YEARS, THIS REPORTING OBLIGATION WAS NOT NOVEL.

However, for all the other Paris Agreement parties, this is a novel requirement and therefore, many of these countries lacked the necessary legal framework for monitoring, verifying and reporting such emissions. They certainly lacked that capacity in 2015 when they proposed their interim Nationally Determined Contributions (NDCs), and in the case of some countries, that capacity is still lacking. It is thus easy to appreciate the challenges these countries face in building the domestic legal and regulatory infrastructure that would enable them to both accurately set their NDCs as well as to monitor and report their performance against those plans.

With each country setting some form of target via their respective NDC, the two Article 6 mechanisms allow Paris Agreement parties to sell mitigation outcomes, to raise carbon finance to support their domestic decarbonisation efforts and commensurately allow those countries with a higher cost of decarbonisation to raise their ambitions under their respective NDCs by acquiring internationally transferred mitigation outcomes (ITMOs) from such selling countries. This allows for the transfer of carbon finance from buying countries to selling countries and, to the extent the private sector is invited to engage in the process, allows for the private sector

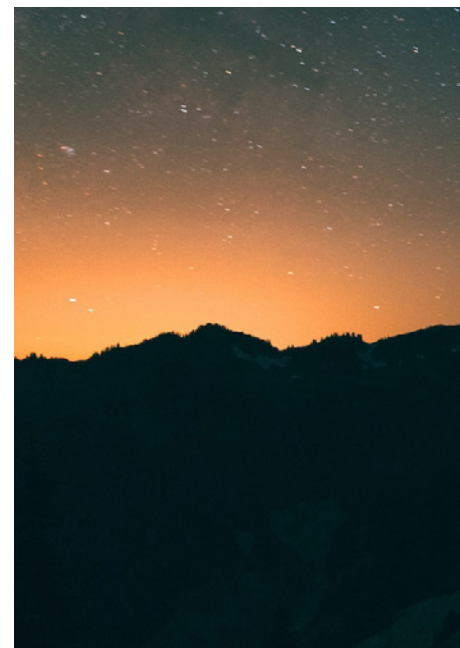
to support decarbonisation efforts in the selling party. The two Article 6 markets are: (a) cooperative approaches under Article 6.2 (the Cooperative Approaches) and (b) the mechanism under Article 6.4 (the Art6.4 Mechanism).

Although the concept of buying and selling international carbon offset units existed under the Kyoto Protocol, the Article 6 markets are different because the selling party has a climate commitment via its NDC that it did not have during the Kyoto-era. This therefore has a knock-on effect on the accounting treatment for ITMOs under the Paris Agreement. In this sense, Article 6 introduces new complexities to international carbon trading under the Paris Agreement.

THE NOVEL ELEMENTS OF ARTICLE 6 MARKETS

A shared characteristic of both market mechanisms is the capacity for a host country to generate units through activities that lead to emission reductions or removals (Mitigation Outcomes) that can be used by another to fulfil its NDC commitments. The unit generated under Cooperative Approaches is called an ITMO,

ALTHOUGH THE CONCEPT OF BUYING AND SELLING INTERNATIONAL CARBON OFFSET UNITS EXISTED UNDER THE KYOTO PROTOCOL, THE ARTICLE 6 MARKETS ARE DIFFERENT



while the unit generated under the Article 6.4 Mechanism is known as an Article 6.4 emission reduction (an Art6.4 ER). When an Art6.4 ER is transferred internationally, it is deemed to be an ITMO by the Article 6 Guidelines agreed at COP26 in Glasgow.

Both Article 6 mechanisms require an authorisation framework to be in place between the host country and the buyer. The scope of the authorisation frameworks differ between the two mechanisms, however. The Art6.4 Mechanism invites three levels of authorisation: approval of the activity by the host country; authorisation of the private sector entity by the host country; and authorisation of the use of the Art6.4 ER. The Article 6.2 rules only require that Cooperative Approaches have in place use authorisations in respect of ITMOs, but most countries that are putting in place the authorisation framework for the Art6.4 Mechanism could very well extend the other authorisations to their Cooperative Approaches.

The other common element between ITMOs and Art 6.4ERs which benefit from the use authorisation is that, upon their first transfer, the host party is obliged to carry out a corresponding adjustment to its emissions balance under the Paris Agreement. Under the Article 6 Guidance and Article 13(7)(b) of the Paris Agreement, when an ITMO (including an Art6.4 ER) is transferred internationally, the host party is obliged to record a '+1' against its emissions balance that reflects an adjustment in its NDC. In a similar manner, the party using it towards its NDC, is obliged to record a '-1'. This is known as a corresponding adjustment under the Article 6 guidelines. Please note the addition or subtraction (as appropriate) is to the respective Paris Agreement Party's emissions balance and not to its NDC.

This requirement is another distinguishing feature of the Article 6 markets, in contrast to the market mechanisms under the Kyoto Protocol.

WHAT IS THE COST OF A CORRESPONDING ADJUSTMENT?

At COP26, governments agreed that a corresponding adjustment will have to be made by a host party regardless of whether or not the ITMO arises from activities that are 'inside' its NDC or 'outside'. The fundamental consequence of applying a corresponding adjustment to an 'outside NDC' activity is that the disproportionate burden of the cost of the corresponding adjustment falls on that country. The 'cost' here is not a reference to the administrative cost of providing the approvals or authorisations, but rather the economic cost to the host country from its application of a '+1' to its emissions balance.

When a party sets its targets for its NDC, it does so on the basis of what it can afford to achieve. In this exercise, it will assess the sources of its emissions and sinks, identify the abatement opportunities and recognise that some abatement opportunities are more costly to implement than others (the Cost of Abatement). This leads to a clear mitigation activity hierarchy based on affordability in light of that party's circumstances. The Cost of Abatement for a particular sector or GHG will, therefore, directly influence a host party's NDC, with the more costly abatement activities being kept outside its NDC for either (i) future NDCs that invite greater ambition, or (ii) funding that mitigation activity with its higher Cost of Abatement through international carbon finance or voluntary carbon finance sources.

The problem that exists during the first NDC period is that many host parties did not set NDCs based on this logical or considered approach. In many instances, they made commitments that do not clearly define what is inside the NDC and what is not. Regardless, since all parties agreed at COP26 that they will apply a '+1' to their emissions balance even in circumstances where the activity falls outside their NDC, each time they

THE FUNDAMENTAL CONSEQUENCE OF APPLYING A CORRESPONDING ADJUSTMENT TO AN 'OUTSIDE NDC' ACTIVITY IS THAT THE DISPROPORTIONATE BURDEN OF THE COST FALLS ON THE HOST COUNTRY

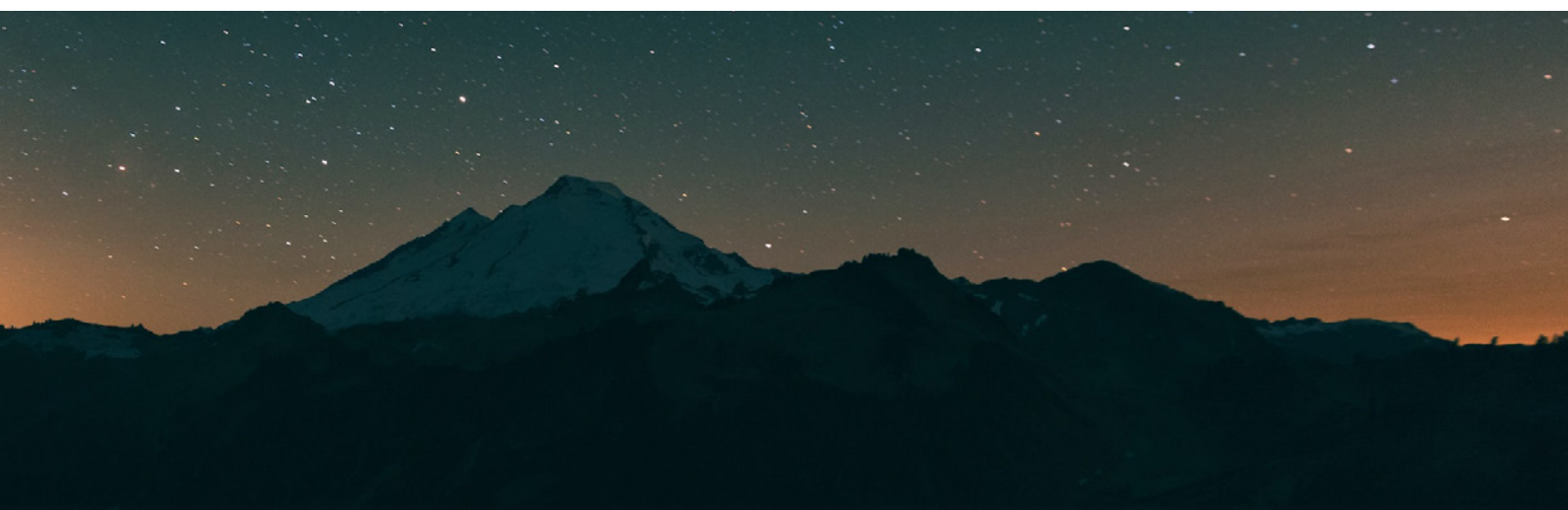


TABLE 1: OPPORTUNITY COSTS AND MARGINAL COSTS FOR 2030 NDCs DERIVED FROM THE GCAM MODEL

GCAM Regions / Countries		Opportunity Cost - Marginal Cost* (cNDC) (\$/tCO2)
Africa	East Africa	67
	North Africa	46
	West Africa	31
	Southern Africa	21
America	USA	155
	Northern South America	78
	Southern South America	36
	Central America and Caribbean	20
Asia	Japan	145
	South Korea	123
	Central Asia	74
	Southeast Asia	25
	South Asia	11
Europe	EU	129
	European Free Trade Association	127
	Eastern Europe	56
	Non-EU	17
Middle East	Middle East	50

*Carbon price level required to achieve 2030 NDCs in 2015 US\$

Source: Ou Yang, Iyer Gokul, Clarke Leon, Edmonds Jae, Fawcett Allen A., Hultman Nathan, McFarland James R., ... Stephanie Waldhoff, Sha Yu, Haewon Mc-Jeon. 2023. "Can Updated Climate Pledges Limit Warming 2 °C? Science 374, no 6568: 693-95. <https://doi.org/10.1126/science.abl8976>

THE DIFFERENCE IN THE CORRESPONDING ADJUSTMENT COSTS MEANS THAT CERTAIN PARTIES HAVE THE ABILITY TO SELL ITMOS AT A MORE COMPETITIVE PRICE

transfer an ITMO that occurs from such an activity, they are taking on an unnecessary penalty. This is because that transfer of an ITMO obliges the host country to increase its emissions balance and increases the 'target' that it has to meet even though that exported ITMO had no impact on its achievement of its NDC. The consequential increase in its emissions balance will oblige the host party to make up for the exported ITMO from a higher marginal Cost of Abatement source. Therefore, unless the price paid for the ITMO (together with its cost of corresponding adjustment) by the acquiring party is high enough to cover the Cost of Abatement from another mitigation activity, it will ultimately be detrimental to host parties to transfer ITMOs including from activities outside their NDCs.

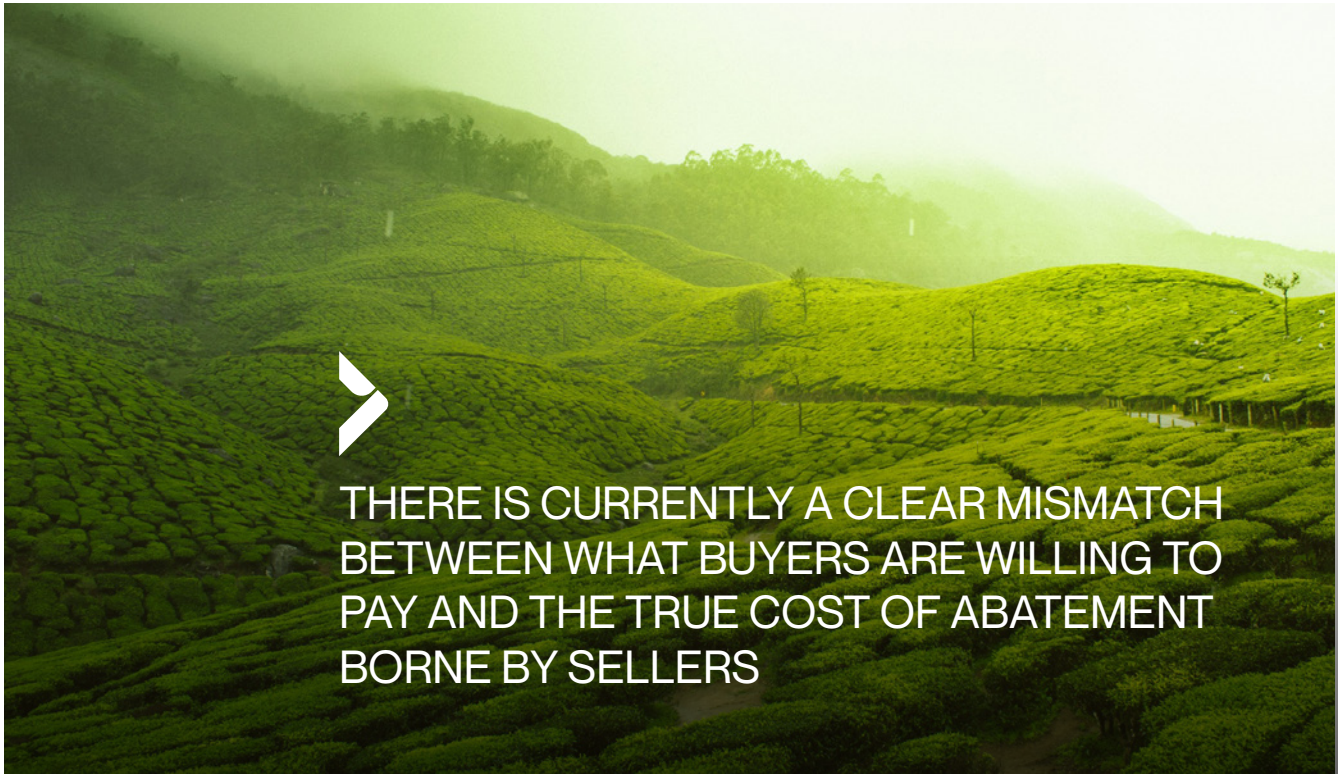
In the World Bank's Corresponding Adjustment and Pricing of Mitigation Outcomes paper¹, the aggregated Cost of Abatement is discussed in the context of the underlying concept of corresponding adjustment within a country.

As the paper highlights, the Cost of Abatement differs between host parties, based on their specific circumstances and NDC ambition levels. Table 1 highlights the estimate average price for a cost of a corresponding adjustment for various counties or regions below.

The difference in the corresponding adjustment costs means that certain parties have the ability to sell ITMOs at a more competitive price than others. Where there are only a handful of buying parties (for example, the EU, the US and the UK have currently not committed to the purchase of ITMOs), the demand for ITMOs will be less than the potential supply. This means it is a buyer's market in terms of their ability to negotiate with the various parties looking to sell. This has led to certain hosts (eg, Ghana) offering to sell ITMOs with a corresponding adjustment cost that is lower than their true Cost of Abatement.

What logically follows is that if external funding is not available to support the higher Cost of

1. The World Bank, "Corresponding Adjustment and Pricing of Mitigation Outcomes" (2023), World Bank Working Paper, Washington, DC.



THERE IS CURRENTLY A CLEAR MISMATCH BETWEEN WHAT BUYERS ARE WILLING TO PAY AND THE TRUE COST OF ABATEMENT BORNE BY SELLERS

THERE IS CURRENTLY A CLEAR MISMATCH BETWEEN WHAT BUYERS ARE WILLING TO PAY AND THE TRUE COST OF ABATEMENT BORNE BY SELLERS

Abatement activities, either (i) the host party will fail to meet its NDC targets, (ii) it will act as a deterrent for it to raise its ambitions for subsequent NDCs or, (iii) it will be forced to make its citizens or domestic emitters bear the higher Cost of Abatement – typically by imposing domestic carbon taxes or by establishing carbon pricing mechanisms such as cap-and-trade programmes.

If the purpose of Article 6 is to enable the transfer of carbon finance from those countries with higher Costs of Abatement to those countries with lower costs, then the appetite for transactions in ITMOs and Art6.4 ERs will increase with the build-out of these markets. However, the likely selling countries have, by agreeing to accept a corresponding adjustment for transfers of ITMOs and Art6.4 ERs from outside NDC activities, unwittingly taken on a penalty that will deter them from selling unless the price for the sale justifies that penalty.

There is currently a clear mismatch between what buyers are willing to pay and the true cost of abatement borne by sellers. For the reasons outlined above, in a buyer's market, this simply means that the cost of receiving carbon finance via Article 6 transactions will ultimately increase the disparity of access to carbon finance between the Global North and the Global South. Thus, while Article 6 represents a new era in carbon markets, it starts its journey with a significant design flaw.

BIOGRAPHY

This article reflects the author's view and not necessarily that of IETA.

***Peter Zaman** is a partner with HFW. Having started his career in the London markets, he moved to Singapore in 2016. With over 20 years' experience as a transactional lawyer, Peter's practice spans climate finance, commodities, derivatives and structured products. His rare combination of commodities and climate finance expertise enables him to provide a holistic view and skillset that is crucial to support businesses in their energy transition. He has been active in climate finance and environmental products markets since 2004. He has experienced all the 'ups and downs' of carbon markets in the EU ETS, under the Kyoto Protocol, in the pilot markets in China, the voluntary markets, UERs, RECs, ROCs and the Article 6 markets under the Paris Agreement.*

For his commodity work, Peter advises on all aspects of over-the-counter, exchange-traded and structured energy derivatives and commodities, including netting, collateral management and regulatory issues. His commodity product suite includes LNG and natural gas, base metals, precious metals and power. He is an active member of a number of industry groups including at ISDA and IETA. He is also part of the UNIDROIT working group on 'The Legal Nature of Voluntary Carbon Credits'.

CARBON MARKETS IN THE YEAR 2030

LUCY HARGREAVES SETS OUT WHAT THE FUTURE FOR CARBON REMOVALS COULD LOOK LIKE - AND HOW TO REALISE IT

CLOSE YOUR EYES. IMAGINE IT'S 2030. THE PATHWAY TO LIMITING GLOBAL WARMING TO 1.5°C IS STILL OPEN. WORLDWIDE, THE TOTAL FLOW OF CAPITAL FROM ALL SOURCES TOWARDS CLIMATE SOLUTIONS IS MORE THAN \$4.3 TRILLION. AS PART OF THAT, THE VOLUNTARY CARBON MARKET (VCM) ALONE IS WORTH \$40 BILLION. DEMAND FOR CARBON CREDITS — FROM CORPORATE NET-ZERO TARGETS, COMPLIANCE SCHEMES, AND GOVERNMENT POLICIES, TO NAME A FEW — REPRESENTS ABOUT 2.5 GIGATONNES WORTH OF CO₂E PER YEAR. AVERAGE PRICES FOR THOSE CREDITS FALL BETWEEN \$80 AND \$150 PER TONNE.

In 2030, corporate carbon credit portfolios are largely aligned to the Oxford Principles. By this time, those portfolios are more or less an even blend of credits for avoided emissions, carbon removal with short-lived storage, emissions reductions with long-lived storage, and carbon removal with long-lived storage.

Looking ahead just seven years from 2023, it seems incredible to imagine that kind of progress.

Today, global tracked climate finance is a mere \$850 billion — a far cry from the trillions needed to avert the worst consequences of climate change. The VCM is currently worth about \$2 billion.

Overall carbon credit supply outstrips demand, and total global CO₂ removal (CDR) is around 2 gigatonnes per year, about 99.9% of which comes from conventional land management like afforestation and reforestation. Novel, durable CDR approaches like direct air carbon capture and bioenergy with carbon capture and storage (BECCS) represent only 0.002 gigatonnes per year. We know that the path to 1.5°C will require approximately 10 gigatonnes of durable CDR by 2050.

In other words, we're a long way from where we need to be — both in terms of decarbonisation and CDR.

But there's good reason for optimism looking ahead to 2030; one only needs to look backwards.

Carbon markets in 2013

A decade ago, the carbon market landscape was vastly different across the three major parts of the market as we know it today: policy, technology, and standards.

CARBON TRADING POLICY WAS UNDERDEVELOPED

At the 2013 COP Warsaw, all countries party to the UN Framework Convention on Climate Change (UNFCCC) were asked to publish Intended Nationally Determined Contributions (INDCs), but the first ones weren't submitted until 2015. It wasn't until the Paris Agreement was ratified in 2015 that INDCs dropped the "intended" and became actual NDCs.

Even then, the Paris Agreement's Article 6, aimed to establish the basis for countries to use and trade carbon credits to achieve their NDCs was not finalised. Article 6 continues to prove one of the most difficult aspects of the agreement.

CDR TECHNOLOGY WAS NASCENT

In order to achieve our global climate targets, engineered CDR and long-lived storage will play a significant role — in the neighbourhood of 10 gigatonnes annually by 2050 accord-

TODAY, GLOBAL TRACKED CLIMATE FINANCE IS A MERE \$850 BILLION — A FAR CRY FROM THE TRILLIONS NEEDED

ing to the IPCC. But in 2013, these technologies were either theoretical or were pilot projects in various early stages of development.

Carbon Engineering — one of the first direct air capture (DAC) companies — was founded in 2009, but hadn't completed its working prototype until 2015. Climeworks, also founded in 2009, opened the first commercial-scale DAC facility in 2017. A pilot project from Archer Daniels Midland and the University of Illinois injected about 1,000 tonnes of CO₂ per day between 2011 and 2014 — still far from commercial scale.

VCM STANDARDS LARGELY DIDN'T EXIST

IETA was the first organisation to inform and advocate for pricing and trading greenhouse gas reductions. Early on IETA was largely concerned with compliance markets, while corporate carbon credit purchasing on a voluntary basis remained relatively rare and nascent throughout the 2000s.

The Verified Carbon Standard (VCS) was launched in 2007 by a group of leaders, including IETA, in an effort to try to standardise the VCM, which at the time was host to a plethora of different approaches and methodologies. The following year, it was joined by Climate Action Reserve and ACR.

Carbon markets today

With that context in mind, it's truly amazing to see the progress made — while simultaneously recognising we're still not moving fast enough. In the past year or so alone, massive strides have been made across policy, technology, and standards.

GOVERNMENTS ARE INVESTING IN CDR

In the US alone, the Infrastructure and Jobs Act, the Chips and Science Act, and the Inflation Reduction Act appear set to allocate \$500 billion in spending on climate over the next 10 years. Included in that is \$1.2 billion to develop commercial scale DAC plants in Texas and Louisiana.

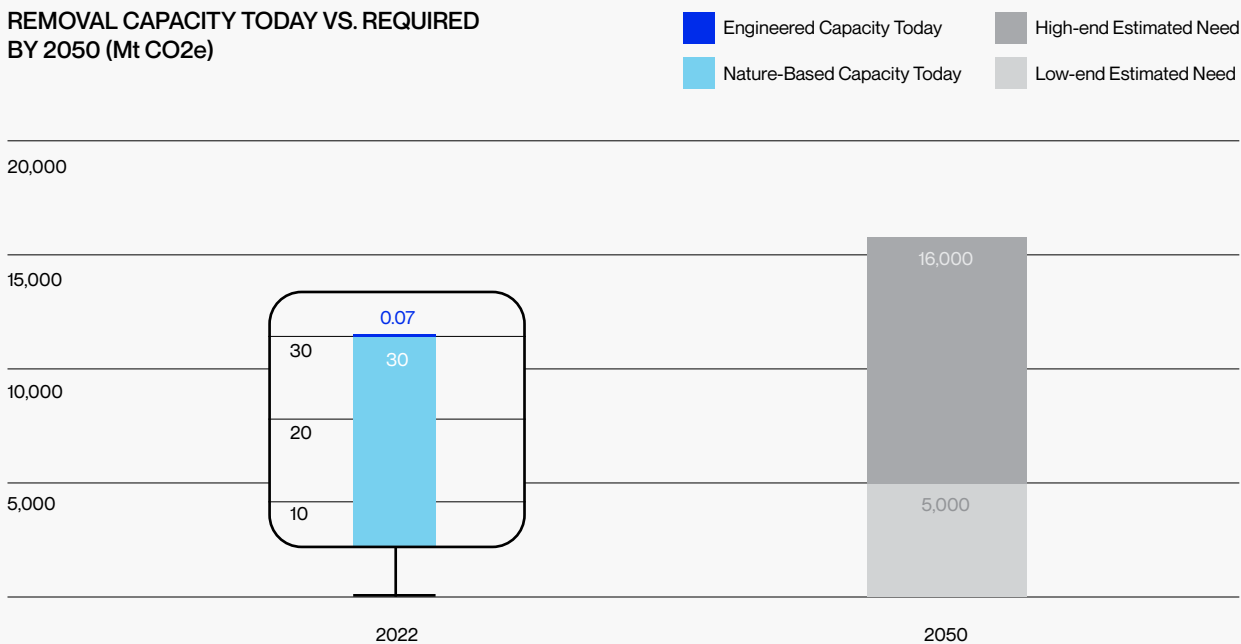
The US Department of Energy launched the first ever CDR procurement effort in September 2023 via its CDR Purchase Pilot Prize, which aims to allocate \$35 million to CDR companies in the US that meet stringent requirements and can demonstrate the ability to crowd in private sector buyers.

Other governments are also working to signal standards and help ignite demand for CDR. The European Parliament, for example, has moved to establish rules for independent verification of carbon removals. If done right, this initiative could help inspire confidence and foster innovation in the space.

THERE'S GOOD REASON FOR OPTIMISM LOOKING AHEAD TO 2030; ONE ONLY NEEDS TO LOOK BACKWARDS



REMOVAL CAPACITY TODAY VS. REQUIRED BY 2050 (Mt CO₂e)



NOVEL TECHNOLOGIES ARE APPROACHING COMMERCIAL SCALE

Engineered CDR is now being recognised as a major part of the solution to climate change by leading scientists. The IPCC released the final piece of the 6th Assessment Report in 2022 that included new science-based pathways affirming that removals would need to scale to 10 billion tonnes per year by 2050 to maintain a chance at 1.5°C. We've since moved from whether CDR could play a role in climate action strategies to how.

And technology developers have a head start.

In 2023, Microsoft signed an 11-year offtake agreement with Ørsted to capture and store 2.76 million tonnes of biogenic carbon, and BCG signed a 5-year offtake with CarbonCapture for 40,000 tonnes of DAC credits.

Climeworks' Orca DAC plant is today capturing up to 4,000 tonnes of CO₂ annually. CarbonCapture's Project Bison plant in Wyoming is set to begin capturing carbon and sequestering it geologically soon, with 5 million tonnes expected to be removed annually by 2030. 1Point-Five expects its 500,000-tonne plant to be on-line in late 2024.

The ADM and University of Illinois BECCS project? It's already permanently sequestered 3.5 million tonnes of CO₂. Drax, a developer of BECCS projects, expects to break ground on the largest BECCS facility in the world next year — capable of capturing and sequestering 8 million tonnes of CO₂ per year when fully active.

STANDARDS BODIES ARE BEGINNING TO COALESCE

Over the course of 2023, guidance has been released by two major standards bodies operating within the VCM and corporate climate strategies. ICVCM released its Core Carbon Principles Assessment Framework and Assessment Criteria this past summer, soon after VCMI released its latest Claims Code of Practice. Together, these represent the best current science and guidance for carbon credit suppliers to define and ensure the integrity of their credits, as well as for corporate buyers to purchase credits in line with a best-practice sustainability strategy.

What's more encouraging is how well the two sets of standards complement, rather than compete against, each other. Further collaboration and convergence between standards bodies can only help restore confidence in carbon markets.

Carbon markets in 2030

Past progress should give us optimism that rapid strides are possible. But it can't be taken as a guarantee that future progress will be as fast. The challenges of the last 10 years won't be the same as the challenges we face now. If we want 2030 to look like the picture painted at the beginning of this article, there are several obstacles that need to be faced head-on.

ENGINEERED CDR IS NOW BEING RECOGNISED AS A MAJOR PART OF THE SOLUTION TO CLIMATE CHANGE BY LEADING SCIENTISTS



THE DICHOTOMY BETWEEN EMISSIONS REDUCTIONS AND CDR HAS BEEN VIEWED AS A “ZERO-SUM GAME” BY SOME LEADERS IN SUSTAINABILITY

SOLVING THE PROBLEM OF DEMAND

While forecasters see the potential for carbon markets to be worth tens of billions by 2030, it's not a sure thing. Currently, demand for carbon credits is depressed, dropping by about 4% year over year between 2021 and 2022. Buyer hesitancy was driven by concerns over the integrity of certain credits. The crash of the crypto bubble also affected demand in the VCM. That slowdown in the flow of finance needs to be reversed quickly in order to accelerate the market. Advances in standards will help address the integrity concerns, and the influx of investment from governments could serve as a strong forward demand signal, which could unlock more demand from risk-averse buyers.

SHIFTING TO “TWIN TARGETS” INCLUDING REMOVALS

The dichotomy between emissions reductions and CDR has been viewed as a “zero-sum game” by some leaders in sustainability. In that view, investment in carbon removal represents money that could be spent on decarbonisation. But the science is clear: we'll need to BOTH meet aggressive targets for global emissions reductions AND scale up CDR to gigatonne levels annually.

Offsetting schemes have contributed — perhaps unintentionally — to the idea that CDR could be a substitute for reduction. But as the two climate approaches become more untethered from each other, investment should be able to flow more efficiently through both avenues. This concept is known as “twin targets.” Organisations and market actors are beginning to think strategically about how to most effectively decarbonise as well as how to channel funds toward scaling CDR for both immediate and long-term climate impact.

Driving accessibility, efficiency, and transparency

The path to 1.5°C will be paved with a multitude of efficiencies — some big, some small. Right now, the gap between where we are and where we need to be in climate finance is in the vicinity of \$4 trillion. The gap in CDR is around 10 billion tonnes annually.

To bridge that gap, two things need to happen:

1. The overall amount of climate finance will need to grow exponentially
2. The flow of that capital toward CDR will need to be much more seamless

Once again, when looking toward the future, it helps to look to the past. The only thing that's been demonstrated to unlock the level and rapidity of scale on par with the challenge we now face is highly efficient digital infrastructure.

This software layer has the potential to reduce friction and build accessibility, efficiency, and transparency into the fabric of carbon markets. Those qualities are critical given the variation in the number of technology types, the attributes of their carbon credits, and the complexity of measuring, reporting, and verifying the integrity of the projects.

And in order to grow the overall market, it's going to take exponentially more market actors. Well-designed digital infrastructure that is user-friendly can help open the door to vastly greater participation as operational burdens are made less onerous on both the buy-side and supply-side of the market.

The path to 1.5°C in 2030 will require digital infrastructure: this will be the underpinning of a fully scaled, trusted, and interoperable carbon removal market.

BIOGRAPHY

Lucy Hargreaves leads Corporate Affairs & Climate Policy at Patch, the infrastructure powering the carbon market of the future. Lucy is a seasoned leader, strategist, and operator with 20+ years of global experience focused on climate action and sustainability in tech, politics, the United Nations, and private foundations and is a trusted and sought-after advisor to senior public and private sector leaders. Lucy currently sits on VCM's Stakeholder Forum and is a board member of Oceans North, a non-profit organization that supports marine conservation in partnership with Indigenous and coastal communities. Lucy holds a Masters in Public Administration from Columbia University where she studied as a Fulbright scholar. She is also a mom of three kids and cares deeply about the planet's future.



THE PATH TO 1.5°C WILL BE PAVED WITH A MULTITUDE OF EFFICIENCIES

NEW DIGITAL INFRASTRUCTURE FOR CARBON MARKETS

FOR THE GLOBAL CARBON MARKET TO FULFIL ITS POTENTIAL, THERE IS A NEED FOR NEW DIGITAL INFRASTRUCTURE TO INCREASE TRANSPARENCY AROUND DATA. **DINESH BABU** EXPLAINS THE OPPORTUNITY THIS PRESENTS – AND THE CHALLENGES

CARBON MARKETS ARE INSTRUMENTAL IN ATTAINING GLOBAL CLIMATE OBJECTIVES, NOTABLY IN THE IMMEDIATE AND FORTHCOMING FUTURE. THEY PRESENT A ROBUST MECHANISM FOR COUNTRIES AND CORPORATIONS TO NAVIGATE THE TRANSITION TOWARDS LOW-CARBON PRACTICES, TARGETING NET-ZERO EMISSIONS.

By promoting the trade of carbon credits – generated through measures such as the shift towards renewable energy or preservation of forests – carbon markets introduce a compelling incentive for impactful climate action. Carbon credit trading could significantly decrease the costs of realising countries' Nationally Determined Contributions (NDCs), potentially by as much as \$250 billion by 2030, according to modelling by the University of Maryland and IETA in 2019. This reduction facilitates an extra 50% emissions cut without additional expenditure. As we gravitate towards net-zero emissions globally, the demand for carbon trading may diminish over time. The post-2020 markets, under the Paris Agreement, will adopt a bottom-up blueprint, granting each participating country significant autonomy in monitoring and reporting its greenhouse gas (GHG) emissions reductions.

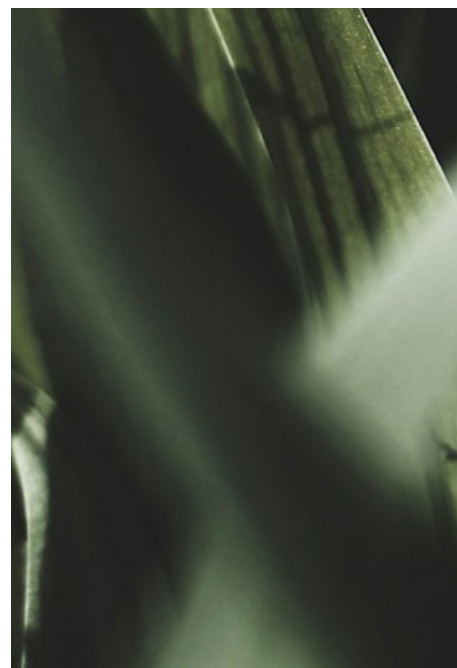
To boost transparency, trust, and integrity, there's a pressing need for a unified data system that gathers and organises openly available data on carbon credits' lifecycle. Such a framework could amplify the growth of carbon markets, serving as a cohesive force in the broader ecosystem. It would consolidate real-time, auditable, and comparable emissions reduction data from diverse registry systems globally. Moreover, this infrastructure could potentially catalyse private sector creativity, facilitating essential market services like forecasting, ratings, compliance reports, due diligence checks, and certifications.

THE CLIMATE WAREHOUSE END-TO-END DIGITAL ECOSYSTEM

The World Bank's Climate Warehouse programme plays a crucial role in the development of infrastructure for a globally connected international carbon market. To avoid the double counting of emission reductions, the market needs secure and transparent systems that ensure changes to data are auditable. The programme is leveraging distributed ledger technology to keep data secure and transparent. If information from different countries and global registry systems can be reflected in a common system, then you considerably reduce the potential for the same carbon credit to be sold twice.

It is also exploring new technologies to address other challenges in carbon markets related to accuracy, robustness, and transaction costs. For example, digital monitoring, reporting and verification (MRV) offers huge potential to reduce the time required to generate and trade an emission reduction. Digital MRV can also reduce transaction costs, ensuring that more of the carbon revenues are directed toward mitigation projects. Together, these initiatives can facilitate complete automation of the chain – from the point of generating an emissions reduction credit all the way to transacting it and its eventual retirement. The goal is a digital system that ensures transparency, increases efficiency, and ensures greater robustness and accuracy of data related to the carbon market.

THERE'S A PRESSING
NEED FOR A UNIFIED
DATA SYSTEM THAT
GATHERS AND
ORGANISES OPENLY
AVAILABLE DATA ON
CARBON CREDITS'
LIFECYCLE



IN ADDRESSING THE URGENCY OF THE CLIMATE CRISES, CARBON MARKETS HAVE EMERGED AS A PIVOTAL MECHANISM, FACILITATING THE NET ZERO TRANSITION

The Climate Warehouse programme prototypes, tests, and develops digital infrastructure to foster greater transparency, trust, and integrity in the carbon market. Successful elements will be operationalised to build the market infrastructure. Examples include the Climate Action Data (CAD) Trust, a decentralised metadata platform that links, aggregates and harmonises all major carbon credit registry data to enhance transparent accounting in line with Article 6 of the Paris Agreement.

CAD TRUST: AN OPEN-SOURCE SOLUTION FOR CARBON MARKETS

CAD Trust can be used to support data sharing, and it provides a backbone infrastructure that can support services built by the public and private sectors to support market activity, such as compliance reporting, transacting, and benchmarking services. The metadata layer was tested by more than 30 carbon market stakeholders, including 11 national governments and 75 testers across 58 testing sessions. Participants included the UNFCCC, UNDP, Verra, Gold Standard, American Carbon Registry, Global Carbon Council, Climate Action Reserve, GenZero, as well as the national governments of Chile, Japan, Peru, Rwanda, Senegal, Singapore, Spain, Sweden, Switzerland, United Kingdom, and Uganda.

At the heart of digital innovation lies the open-source software paradigm – a model where the software’s code is accessible, modifiable, and improvable by any developer. Its foundational principles encompass transparency (the code is available for inspection), collaboration (the public nature of the code allows extensive cooperative development), meritocracy (ideas are valued based on their inherent merit), and community (a strong network of users and developers).

The CAD Trust promises unparalleled transparency, ensuring that data is exclusively modifiable by its owner. Moreover, the immutable nature of the blockchain ensures all changes are permanent, visible, and verifiable by any user. This decentralised model ensures the longevity of data and permits regulated access to information based on predefined permissions.

KEY BENEFITS

Independent standards play a pivotal role in reducing the challenges associated with monitoring external systems. CAD Trust simplifies this process by streamlining the aggregation of information, which in turn promotes trust and transparency between various systems. For buyers and traders, CAD Trust becomes a beacon of reliability by providing a consolidated source of trustworthy data. This platform not only offers easy access to project developer information but also opens doors to improved price discovery, especially when tracking the Article 6 status of credits once they are authorised by the host country.

In the realm of exchanges, the inception of CAD Trust marks a significant shift towards addressing market fragmentation. It champions the cause of standardisation and eases the integration process of diverse systems. The integrity of assets traded is assured, and the platform’s robust structure enhances the security of registry data necessary for transactions. This focus on promoting standard asset types is expected to catalyse a rise in trade volumes.

For rating agencies, CAD Trust is indispensable as it presents a harmonised pool of data, paving the way for precise risk assessments and rating assignments. The platform’s comprehensive insight into projects and units is invaluable for sectoral evaluations and the establishment of benchmarks. Moreover, the dynamic nature of



Connecting carbon markets through open data



climateactiondata.org

the platform facilitates ongoing updates to ratings based on real-time data. Meanwhile, project developers benefit immensely from CAD Trust by showcasing their projects and unit portfolios across standards via a trusted medium. By fostering trust in the accounting of mitigation outcomes, the platform ensures transparency and trade, which indirectly propels the interests of project developers.

Governments also see a boost in the visibility and credibility of their climate activities with CAD Trust. The platform provides a vantage point to view mitigation outcomes for potential purchases and promotes the inception of new project activities. This involvement augments the participation of the private sector in the market and offers an aggregated view of projects, making it easier to identify any duplicative endeavours.

Finally, research institutions leverage CAD Trust to enhance their data mining capabilities. This aids in-depth research on climate projects, generating vital indicators that shed light on technology trends, investments, and performance benchmarks. Such insights further the cause of technology transfer and climate investment, scaling up GHG emission reductions.

CAD Trust can bolster Article 6 by promoting compatible national registry systems. As Parties report to CAD Trust using a unified data standard, it will ensure harmony between national and independent registries, aiding the Paris Agreement's international reporting. The consensus model from CAD Trust could shape or adapt to Article 6.2 and 6.4 reporting needs. Additionally, CAD Trust could streamline data transfers to the Article 6 database or the UN's centralised accounting and reporting platform via APIs, avoiding dual submissions for Parties.

SUMMARY

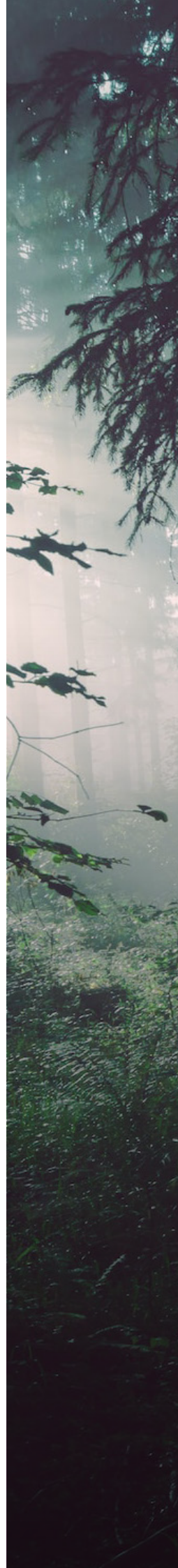
In addressing the urgency of the climate crises, carbon markets have emerged as a pivotal mechanism, facilitating the net zero transition. The digital shift, notably spearheaded by the World Bank's Climate Warehouse programme, underscores the evolution of these markets towards greater transparency, efficiency, and reliability. The CAD Trust stands out as a backbone in this transformation, offering an open-source platform that unifies diverse data sources, ensuring robust transparency across the carbon market landscape. Through integrating auditable emissions data and leveraging innovative digital tools, CAD Trust not only enriches the present-day carbon trading infrastructure but also sets a precedent for the future, highlighting the synergy between technology and environmental initiatives.

BIOGRAPHY

Dinesh Babu is Executive Director of the Climate Action Data Trust. Dinesh has over 29 years of experience in carbon markets, GHG mitigation, clean energy planning, policy development, financing, and capacity building. He previously worked as Executive Director at EY and led a World Bank-funded and State Bank of India operated five-year solar rooftop PV programme. He was also Chief of Party for a USAID-funded Partnership to Advance Clean Energy – Deployment (PACE-D) (TA) in India. Earlier, Dinesh worked as a Group Director and CEO for Asia Carbon Group and UK-based Carbon Ratings Agency, both of which were actively involved in driving carbon market initiatives.



AT THE HEART OF DIGITAL INNOVATION
LIES THE OPEN-SOURCE SOFTWARE
PARADIGM





THE CAD TRUST STANDS OUT AS A BACKBONE IN THIS TRANSFORMATION, OFFERING AN OPEN-SOURCE PLATFORM THAT UNIFIES DIVERSE DATA SOURCES, ENSURING ROBUST TRANSPARENCY ACROSS THE CARBON MARKET LANDSCAPE.

BEYOND EMISSIONS: THE EVOLUTION OF THE VOLUNTARY CARBON MARKET

THE VOLUNTARY CARBON MARKET HAS A LONG HISTORY OF PLUGGING THE GAPS IN CLIMATE AMBITION – AND IT IS EVOLVING TO MEET CURRENT CHALLENGES AND BE EVEN MORE IMPACTFUL FOR THE FUTURE, ARGUES **JONATHAN SHOPLEY**

IN THE GREAT DRAMA OF THE CLIMATE CRISIS, THE VOLUNTARY CARBON MARKET (VCM) HAS FREQUENTLY BEEN CAST IN A SUPPORTING ROLE. YES, PRIVATE FINANCE HAS FUNDED THOUSANDS OF INNOVATIVE PROJECTS TO REDUCE, MITIGATE, OR AVOID GREENHOUSE GAS EMISSIONS OVER THE PAST FEW DECADES, BUT NOT ON THE SCALE REQUIRED FOR THE LOW-CARBON TRANSITION. THE SEARCH FOR POLITICAL SOLUTIONS ALWAYS TAKES CENTRE STAGE.

But if, as I and many others believe, decarbonisation depends on a global market mechanism that puts a fair price on emissions, then for much of its history, the voluntary market has been the only show in town.

FILLING THE GAP

The first privately-funded carbon offset is lost in the fog of time, but it's likely to have been a reforestation project sometime after the Intergovernmental Panel on Climate Change's (IPCC) First Assessment Report in 1990, before the Kyoto Protocol enshrined the idea of a global carbon market to allocate capital to where it could have the greatest impact.

By today's standards, the quality and integrity of the early VCM was in its infancy, but as with any evolving market, mechanisms started to come into force. While the market waited for Kyoto's much-anticipated Clean Development Mechanism (CDM) to take effect, private capital continued to flow as investors enthusiastically backed early renewable and nature-based emissions reduction projects.

However, the CDM could not deliver, seemingly too far ahead of aggregated national ambition to deploy its cooperative approach, so it withered away. But it did provide a framework that was picked up by the voluntary standards, which backfilled low ambition at a national level by enabling corporates to take voluntary action ahead of, and beyond, regulation and compliance.

In the long period waiting for 2015's Paris Agreement, at a time when political will for a global market seemed to have been extinguished, it was the VCM that kept the flame alive. Standards sprung up to offer buyers a credible means of reducing and avoiding emissions in places that decarbonisation couldn't reach; ICROA was formed to establish best practice for companies operating in the market; and new and innovative methodologies and approaches to financing were developed.

Even after COP21 in Paris heralded a new era of political cooperation, the VCM continued to grow in scale and sophistication, from the bottom up – delivering immediate impact, even during the six years between the Paris Agreement being struck and coming into full force

THE CDM COULD NOT DELIVER, SEEMINGLY TOO FAR AHEAD OF AGGREGATED NATIONAL AMBITION TO DEPLOY ITS COOPERATIVE APPROACH



(2021). More and more companies – including more than half of the Fortune Global 500 – made significant climate pledges, many to net zero emissions. According to Ecosystem Marketplace research, the market for voluntary credits had grown to \$2.1bn in 2021, with transactions covering 518.3 megatonnes of CO₂e – representing roughly sixfold growth since 2014.

Recognising the impact of the VCM and its role in scaling climate action, the Integrity Council for the Voluntary Carbon Market (ICVCM) and Voluntary Carbon Market Integrity Initiative (VCMI) began their work to address points of weakness – from both a supply and demand perspective. Ratings agencies and specialised insurance products also started to spring up, bringing further maturity.

GROWING PAINS

Now, the VCM is at a crossroads. On the one hand, its rapid expansion in 2020 and 2021 came to a temporary halt amid deteriorating macroeconomic conditions and intense media scrutiny over its integrity. Trove Research (now known as MSCI Carbon Markets) recorded a 14% drop in issuances in 2022.

While any system must be held to account, we must also recognise that this is a solution delivering action and results now, and continuous improvement is critical as the market evolves and works through its growing pains.

Too many people jumped to the conclusion that the market had matured and its inadequacies were fundamental rather than developmental, not seeing the vast impact on both climate and communities delivered through the majority of VCM projects.

Now the voluntary market faces the prospect of the UNFCCC-backed Article 6.4 mechanism coming into force in the next few years, providing a structure for a carbon credit market on which emission reductions or removals can be transferred internationally. Many hope this will finally create a compliance market with the scale, integrity and transparency that deep and rapid climate action requires.

Some argue that this means the VCM faces cannibalisation, but I believe there is a future for the VCM in a Art6.4 world. For a start, it is hardly guaranteed that Article 6.4 will deliver the kind of global market that effectively incentivises the abatement and mitigation we need.

It is possible instead that the primary means of international carbon trading will be under Article 6.2, which facilitates decentralised, bilateral agreements between states to trade Internationally Transferred Mitigation Outcomes (ITMOs). Here, there are already signs that voluntary market credits could be used, such as Singapore's decision to recognise credits issued by Gold Standard and Verra for use as offsets against carbon taxes under Article 6.2 agreements.

Even if political agreement does create a centralised global compliance market under Article 6.4, it's premature to give up on the VCM.

THE VCM OF THE FUTURE

While the theme of this piece is evolution, in the voluntary markets the story of the last couple of years has been revolution.

In September 2021, the Taskforce on Scaling Voluntary Carbon Markets, an influential group of financiers led by former central bank chief Mark Carney, began pushing for the creation of a deep, highly liquid, and crucially com-

WHILE ANY SYSTEM
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moditised voluntary market for carbon. The goal it set was to increase annual carbon removals by 1,500%, to 2 gigatonnes of CO₂e a year, which McKinsey research suggests is feasible given projected increases in corporate demand.

The taskforce led to the creation of the ICVCM, which in March 2023 set out its 10 Core Carbon Principles (CCPs) for high-quality credits, and in July 2023 released detailed assessment criteria for whether carbon-crediting programmes and carbon project categories meet those principles.

At much the same time, the VCMi formed to offer best-in-class guidance to corporate buyers of carbon credits on how they should make a high integrity claim that reflects carbon credit use, integrates with ambitious decarbonisation, and puts it in the context of global net zero. This adds to work already being done by the Science-Based Targets Initiative (SBTI), which calls for stricter, more transparent decarbonisation targets by companies.

Market participants, including the carbon standards, are embracing this revolution. The result is that, in both quality and integrity, the voluntary market is converging in many respects with what we're likely to see in the UN-backed market, with the prospect that buyers in each market will have access to a single pool of fungible credits.

This has huge implications. A commoditised mass market would enable price discovery, allow project investors to reduce their risk exposure, and provide a price benchmark for projects that provide benefits beyond carbon. IETA's research with the University of Maryland found that a single, global, transparent market for countries to reach their Nationally Determined Contributions (NDCs) collaboratively would double emissions reductions.

That same logic applies to the voluntary market. With integrity and efficiency, demand will follow - this must be reflected in prices, ensuring they are high enough to incentivise internal reductions and to ensure VCM projects can thrive and scale.

To understand what this will involve, consider that the VCM has produced highly divergent approaches, methodologies, financing and standards, which have greatly expanded the range of projects and embedded community im-

pact in a way that compliance credits have not. No one wants to discard this crucible of innovation, but scale requires some measure of standardisation. The CCPs are designed to create an instrument that simplifies a deeply complex set of issues around standards, benchmarking, and quality, while still recognising the nuances around community development.

If successful, producing credits that all buyers could use, voluntary and compliance alike, the reinvigorated VCM could be a runway for Article 6.4 implementation, offering future buyers a well-developed, securitised market. But its story needn't end there. The VCM can continue to play a complementary role in a Paris-aligned world, by harnessing the power of private capital.

There are various reasons to believe this will be the case. On the supply side, governments in host countries may well choose not to authorise projects for Article 6.4, if the quality and price of voluntary carbon credits is high enough, because those credits sold abroad come with a cost: the corresponding adjustment to their own NDC.

On the demand side, companies may continue to choose to buy high-quality voluntary carbon credits over A6.4 units, if they bring greater flexibility and if they can tell a better story about the co-benefits. Indeed, it's possible that voluntary credits of this type will command a significant price premium.

Demand for voluntary credits could be strengthened further if digital innovation using AI, blockchain, remote sensing and big data management can reduce friction, for example reducing time and cost to approve, verify and validate projects, and improve transparency and interoperability between different registries. Such innovation diffusion is exactly what competitive private markets excel at.

CHALLENGES REMAIN

This is one possible future. There is uncertainty over the status of corresponding adjustments – introduced to Article 6 to prevent double-counting – in the voluntary markets, with many including IETA believing they are unnecessary so long as national and corporate accounting remain separate.

EVEN IF POLITICAL AGREEMENT DOES CREATE A CENTRALISED GLOBAL COMPLIANCE MARKET, IT'S PREMATURE TO GIVE UP ON THE VCM



THE VCM HAS PRODUCED HIGHLY DIVERGENT APPROACHES, METHODOLOGIES, FINANCING AND STANDARDS

And there is debate over the acceptable language for those that buy and retire credits: can they continue to say their credit has offset their emissions, compensating for emissions they can't avoid, or must they say they have made contributions to emissions reductions within a country through carbon finance for projects?

Much lies with the decisions taken by host countries, several of which like Indonesia and Honduras placed a hold on the sale or export of voluntary carbon project credits while the new landscape takes shape.

There are also challenges to ensure that while the new standards such as VCMI claims build integrity, they do not remove the on-ramp that allows all companies to take immediate action, allowing them to improve and raise ambition over time.

PERFECTION AND PRAGMATISM

Yes, it would be a fool's errand to rely on voluntary action alone to decarbonise. Yes, we need abatement first and mitigation second. To unlock demand, we need sufficient integrity that businesses can make unimpeachable claims.

But we also can't let perfection be the enemy of pragmatism. If we beat companies too

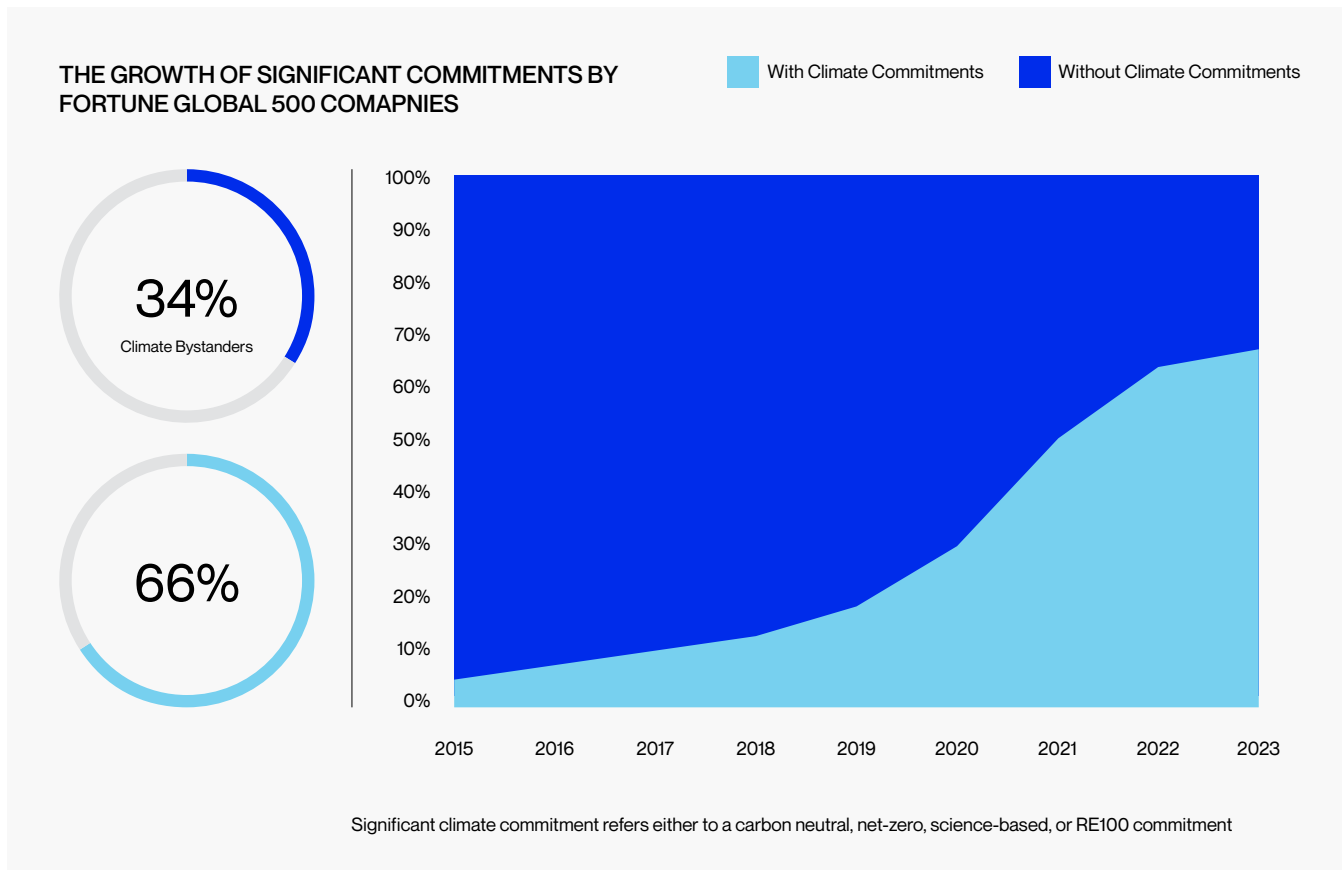
hard with a compliance stick, they will lose the extraordinary willingness they have shown to go beyond what is mandatory, putting their money, discretionary effort and ingenuity to work.

At this critical stage in our collective effort to limit the extent of climate change, the VCM is rapidly adapting and maturing, adding layers of governance and financing infrastructure, and embracing new technology. Whether it continues to perform a supporting role in the coming years, or moves centre stage, it certainly has a role to play in scaling our collective efforts - let's ensure it can evolve to deliver even greater impact now.

BIOGRAPHY

Jonathan Shopley is Managing Director of External Affairs at Climate Impact Partners – experts in the voluntary carbon market for over 25 years- where he focuses on the company's engagement with national and international climate policy development. He is a veteran of the annual global climate change negotiations, co-chair of industry body ICROA, and on the board of IETA, which he combines with a huge breadth and depth of experience embedding sustainability in business.

IT WOULD BE A FOOL'S ERRAND TO RELY ON VOLUNTARY ACTION ALONE TO DECARBONISE ... WE NEED ABATEMENT FIRST AND MITIGATION SECOND



INTEGRITY IN THE SPOTLIGHT

AMY ZELL PROVIDES AN UPDATE ON IETA'S THE EVOLVING VCM PAPER, FOCUSING ON RECENT INITIATIVES, ADDITIONAL EFFORTS TO ENSURE QUALITY, AND THE GROWING CALL FOR GREATER STANDARDISATION AND OVERSIGHT

IN A WORLD CLAMOURING FOR CLIMATE ACTION, THE CARBON MARKET STANDS AS BOTH A BEACON OF HOPE AND A MARKET IN TRANSITION. THE MARKET FOR CORPORATE BUYERS ('VOLUNTARY CARBON MARKET' OR VCM) HAS LONG PLAYED A PIVOTAL ROLE IN THE GLOBAL CLIMATE LANDSCAPE, BUT THE PAST YEAR HAS POSED SIGNIFICANT CHALLENGES. IT HAS GRAPPLED WITH TRUST ISSUES AND THE NEED TO REDEFINE ITS INTEGRITY IN THE FACE OF MOUNTING CONCERNS. HOWEVER, AMIDST THESE TRIALS, THE MARKET HAS SHOWN RESILIENCE AND ADAPTABILITY. AND WHILE ACKNOWLEDGING THE HURDLES FACED, THERE REMAINS OPTIMISM ABOUT THE VCM'S FUTURE, RECOGNISING IT AS ONE OF THE MOST EFFICIENT TOOLS FOR IMMEDIATE GLOBAL DECARBONISATION.

To frame the market's reinvigorated emphasis on integrity, we first must understand where the trust has gone. Trust is the bedrock of any successful carbon market; whether servicing compliance needs or the needs of voluntary buyers. While the market for voluntary buyers has grown in popularity in recent years, issuances and retirements remained stable in the first half of 2023 compared to H1 2022.¹ But with issuances outpacing retirements, this has resulted in a steady increase in non-retired credits, which are presently estimated to be in excess of 748 million tonnes. Buyer trust has been shaken due to various factors, including uncertainty about the quality of carbon credits and the risk of being accused of greenwashing. Media headlines questioned whether carbon credits associated with certain projects represented real emission reductions. Other news outlets covered court cases where voluntary buyers of credits were accused of making misleading claims, and we even saw the EU progress legislation to severely limit the use of terms like "carbon neutral".

This erosion of trust inspired a multi-faceted effort to redefine integrity in the VCM by those who recognise its power to play a meaningful role in the global achievement of the Paris Agreement goals. Initiatives such as the Integrity Council for Voluntary Carbon Market (ICVCM) and the Voluntary Carbon Market Integrity Initiative (VCMI) are working to define integrity for

buyers and sellers, while a revamped ICROA is providing guidance on high-integrity practices for intermediaries, while other groups are doubling down on moving this market forward.

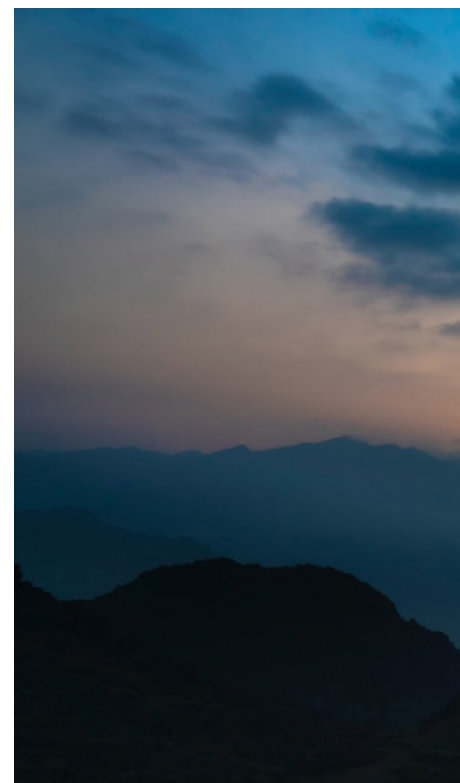
ICVCM

The ICVCM is an independent governance body looking to set a quality threshold for carbon credits. To delineate high-quality credits in support of scaling the carbon market, the ICVCM released its full global benchmark for high-integrity carbon credits, with the final versions of the Core Carbon Principles (CCPs), Assessment Framework, and Assessment Procedure, in 2023. The CCPs will act as a global benchmark for carbon credits that meet rigorous thresholds of the CCP criteria. Developed with input from hundreds of organisations across all aspects of the carbon market, the CCPs will provide a means of identifying carbon credits that create real climate impact based on best practices. The first CCP-labelled credits are expected to reach the market in early 2024. IETA members have welcomed this initiative, seeing it as a step in the right direction to ensure the credibility of carbon credits, and are cautiously optimistic about where this will land.

Carbon crediting programmes issuing credits for voluntary buyers can already apply for CCP assessment, which will confirm wheth-

CARBON CREDITING PROGRAMMES HAVE PROLIFERATED, RESPONDING TO THE DIVERSIFYING DEMANDS OF MARKET PARTICIPANTS

¹. <https://climatefocus.com/wp-content/uploads/2023/08/VCM-Dashboard-2023-H1-FINAL.pdf>



AN IMPORTANT ASPECT OF THE VCM IS ENSURING THAT BUYERS ARE EMPOWERED TO MAKE CREDIBLE CLAIMS THAT ACCURATELY AND TRANSPARENTLY DESCRIBE THEIR VOLUNTARY CLIMATE ACTION.

er they meet the program criteria set out in the Assessment Framework. However, they will need to wait for the final step in the process of assessing credits against the CCP criteria and Assessment Framework.

This next step in the process of getting CCP-labelled credits into the market includes a series of multi-stakeholder workshops. The Category Working Group – which started in October 2023 – will make the first assessments of carbon crediting categories, determining which categories of carbon credits are fast-tracked for CCP labels or are submitted to a multi-stakeholder working group (MSWG) for deeper assessment or are unlikely to meet requirements. There will be various MSWGs covering topics such as energy, land-use & forestry, waste management among others, as required.

VCMI

An important aspect of the VCM is ensuring that buyers are empowered to make credible claims that accurately and transparently describe their voluntary climate action. In 2023, VCMI launched its capstone Claims Code of Practice with the goal of building trust and confidence in how companies engage with carbon markets. The Claims Code of Practice provides companies with a rulebook on the credible use of carbon credits and associated climate claims, all with the goal of accelerating climate action. The initiative is working to publish additional modules for the Claims Code of Practice in order to make it operational for ambitious corporate entities.

IETA members are keen to see how the Claims Code of Practice will enhance demand for voluntary carbon credits in light of low-

er-than-expected demand through 2023. Some expressed concern over the accessibility of claims in the initial review of VCMI's publications and feel additional claims tiers that encourage greater use of carbon credits would be welcome.

VCMI is currently conducting research to explore additional VCMI claims and an "on ramp" option which will provide a pathway towards the Silver, Gold, and Platinum claims. IETA members are particularly interested in this addition. Other work and modules include finalised names of claims and a monitoring, reporting, and assurance framework.

ICROA

ICROA is a leading, not-for-profit, industry accreditation programme, housed within IETA, committed to enhancing integrity in the VCM. It is open to organisations that offer carbon credits as well as emissions reduction and offsetting services. Participation requires an annual independent audit to ensure compliance with ICROA's Code of Best Practice. To this end, ICROA has been accrediting best-in-class intermediaries in the VCM including project developers, brokers, traders, and carbon advisors, since 2008. As of 2023, the ICROA Accreditation is open to non-IETA members.

This year was an incredibly busy year for ICROA. The programme established an Independent Advisory Committee (IAC), re-branded, and re-designed several documents to meet the needs of an evolving VCM. The IAC was established to provide greater independence of the programme from the market and establish a panel of industry experts to support the Accreditation Committee.



ADDITIONAL EFFORTS TO ENHANCE QUALITY

Efforts to ensure the quality of carbon credits extend beyond these three highlighted initiatives.² Other organisations and market participants, such as ratings agencies and carbon crediting programmes, are taking steps to improve the integrity of the VCM. Governments and regulatory bodies have also entered the arena, driven by the belief that they can contribute to the VCM's positive evolution.

In early 2023, ISO published its Net Zero Guiding Principles, setting the stage for the eagerly awaited ISO 14068 Carbon Neutrality Standard. These standards provide a structured framework for organizations to align with net-zero targets and uphold transparency. Similarly, the Science Based Targets Initiative (SBTi) has continued to offer invaluable guidance to corporations, providing guidance on their journey towards net-zero emissions. SBTi is also actively exploring the effectiveness of carbon credits in achieving climate targets, emphasising the need for rigorous evaluation and accountability. The Greenhouse Gas Protocol has undertaken a comprehensive review and update of corporate standards and guidelines in 2023. Given its ubiquitous usage in the VCM these pending revisions will carry significant implications for the accurate quantification of GHG inventories, strengthening the foundation of the market's integrity.

Carbon crediting programmes have proliferated, responding to the diversifying demands of market participants by catering to specific project activities and classes of carbon credits. Notably, major programmes are re-dedicating themselves to quality and continuous improvement, reinforcing the importance of credibility and trust in the market. Ratings agencies have drawn inspiration from their counterparts in financial markets, striving to provide buyers with clarity and transparency in assessing carbon credits. While facing challenges related to in-

consistencies across platforms, these agencies are actively engaged in identifying high-quality carbon credits to meet the demands of discerning buyers.

Looking ahead, governments and regulatory bodies are expected to play a growing role, imposing disclosure rules, protecting consumers from greenwashing, and defining the legal nature of carbon credits, which will further bolster the market's integrity.

THE PATH FORWARD

The carbon market remains an effective and indispensable tool for decarbonisation efforts worldwide. While it has faced challenges in 2023 for sellers and voluntary buyers, the market is on the path to recovery. Market players of all shapes and sizes are collectively working towards restoring integrity and ensuring the quality of carbon credits. This evolution is necessary to enhance transparency, credibility, and trust. Despite the challenges, IETA remains bullish on the role the private sector can play to accelerate and enhance emission reduction. The market's resilience, adaptability, unwavering commitment to reducing and removing emissions, and all the sustainable development benefits that it generates make it a vital component in the fight against climate change. As we move forward, we must continue to embrace change, foster innovation, and prioritise quality to ensure the VCM's expanded success on the global stage.

BIOGRAPHY

Amy Zell is the Technical Director, Voluntary Carbon Markets with IETA. She is a passionate advocate of the voluntary carbon market and its ability to accelerate the Paris Agreement Goals. Amy runs IETA's VCM working group and supports the ICROA Programme Endorsement Procedure.

² A summary of best practice guidance can be found in the appendix of IETA's The Evolving VCM paper: <https://www.ieta.org/resources/reports/the-evolving-voluntary-carbon-market-paper/>



TRUST IS THE BEDROCK OF ANY SUCCESSFUL CARBON MARKET



AN IMPORTANT ASPECT OF THE
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VCM AROUND THE WORLD

ANTOINE DIEMERT SUMMARISES THE KEY TAKEAWAYS FROM THIS YEAR'S IETA & ICROA ROUNDTABLE ON THE VOLUNTARY CARBON MARKET

THE 2023 EDITION OF IETA'S NORTH AMERICA CLIMATE SUMMIT WAS A BUZZING THREE DAYS OF EVENTS AND DISCUSSIONS ON ALL THINGS CARBON MARKETS. AMONG THE MANY SESSIONS, THE PROGRAMME FEATURED THE EVER-POPULAR IETA & ICROA'S WORLD CAFÉ ROUNDTABLE ON THE VOLUNTARY CARBON MARKET (VCM). WORLD CAFÉ EVENTS ENABLE THE EXAMINATION OF PRE-DEFINED TOPICS THROUGH SEVERAL ROUNDS OF GROUP DISCUSSIONS. EACH ROUND BUILDS ON WHAT WAS PREVIOUSLY DISCUSSED, SO THAT BY THE END OF THE EVENT, EACH TOPIC WILL HAVE BEEN EXPLORED IN DETAIL BY ALL PARTICIPANTS, AND CONCRETE PROPOSALS WILL EMERGE.

Discussions typically focus on the hot topics of the day. At this year's event, six groups discussed the following VCM topics:

1. Corporate incentives and use cases for carbon credits on the way to net-zero
2. Assessing the quality of carbon credits
3. The role of market intermediaries in promoting greater integrity and transparency

The VCM has received a lot of attention from the media and regulators in 2023. However, the work of the main market integrity initiatives is still underway, leaving many important questions and concerns as yet unanswered. This context has been deterring some buyers from investing in carbon credits, while others are simply 'green-hushing', ie not talking about their undertakings. This situation is likely to persist for a little longer until there is greater visibility, greater trust, and less reputational risk in the use of carbon credits for offsetting purposes. If you are an optimist, you may characterise these as exciting times for a market that continuously strives to improve and deliver greater climate impact. If you are less enthusiastic, there are reasons to question whether the global approach to standardising this market and looking for perfection is the right one.

Whether it's about the quality of supply, integrity of demand, the quality and transparency of intermediaries acting in between, or the way

buyers are incentivised (or not!) to use carbon credits as part of their decarbonisation journey, topics for debate seem to abound. If you are not closely monitoring these intertwined issues and developments, it can be quite daunting to stay on top of it all!

The 2023 world café was an opportunity to fill the room with market experts from various backgrounds to share new perspectives, ideas, and concrete proposals to scale credible market-based voluntary action.

The below is a summary of all views shared and does not necessarily represent the views of all IETA members.

CORPORATE INCENTIVES AND THE USE CASES FOR CARBON CREDITS ON THE WAY TO NET-ZERO

This discussion took place as the Science-Based Targets Initiative (SBTi) is developing guidance on beyond value chain mitigation (BVCM) in the context of net-zero goals. Ambitious corporate action is at the heart of SBTi's work, but the impact of its guidance largely depends on its wide adoption by the private sector, and therefore its achievability. However, regional economic differences, sector-specific challenges (e.g., hard-to-abate sectors), and low carbon technological development all present hurdles to the achievement of net-zero goals. There-

IF YOU ARE AN OPTIMIST, YOU MAY CHARACTERISE THESE AS EXCITING TIMES FOR A MARKET THAT CONTINUOUSLY STRIVES TO IMPROVE AND DELIVER GREATER CLIMATE IMPACT



fore, a recognition of the role that carbon credits could play has the potential to unlock greater action and impact. IETA has set up a Task Force to scrutinise this question and is commissioning independent research.

Participants were invited to debate issues such as the necessary incentives and guardrails for a greater use of credits in support of net zero delivery, use cases for credits for near- and long-term emission reduction targets, and how we encourage laggards and hard-to-abate sectors to join or raise their ambition.

In summary:

- Many were convinced that the main integrity initiatives will be successful in solving some of the reputational challenges, but a shared concern is that they are narrowing the scope of credit uses. On decarbonisation, SBTi is seen as falling short because of its lack of flexibility and incomplete coverage of all sectors. Alternative approaches should recognise the fragmented landscape of players and be available to all – small businesses, large emitters (including oil and gas sector), and businesses in developing economies. It was often noted that decarbonisation will always face challenges – both economic and technical – and therefore society, and all integrity initiatives, must recognise the greater role that market-based solutions must play in corporate net-zero delivery. SBTi's forthcoming beyond value chain mitigation (BVCM) guidance could be interesting, depending on the degree to which they encourage the purchase of carbon credits. A positive signal would be if SBTi endorses the use of quality removals towards interim targets and not just at the net zero period t, as this is disincentivising early investment in removals. Many participants would like BVCM to be required, for a fixed percentage (e.g., 10%) of unabated emissions. Another approach is a requirement to incrementally compensate for unabated emissions (e.g., with a 1% increase year-on-year).
- It has become harder to raise capital and interest rates are rising sharply. This renders internal decarbonisation projects more difficult and more expensive, and should create a bigger use case for carbon credits. The argument was made that increased investment in carbon credits today is a way to bend the curve now because cumulative emissions count in the climate change challenge. That said, the vast price and environmental attribute differences between credits can be overwhelming, especially when the market is being closely scrutinised. Corporates are in the room, willing to participate, but incentives for action are hard to find. The fear of inaction needs to be greater than the fear of action.
- Many participants felt that this market, self-regulated by nature, should ultimately become regulated. One of the reasons is that compliance and regulation offer a safe space. Hybrid "tax or offset" mechanisms that include credits in their design, like in South Africa, Colombia and soon in Chile, or an approach such as the EU's Carbon Border Adjustment Mechanism, allowing compensation under certain conditions, are good examples.
- Finally, the discussions also highlighted concerns that if the market pivots from compensation to contribution claims, it could further undermine corporate action, through a decoupling from carbon footprints. Participants saw uncertainty in the impact that contributions claims would make if the concept of tonne-for-tonne accountability becomes optional, however, money-for-tonne was seen as a pragmatic alternative. The groups recognised that the debate on compensation vs. contribution claims is necessary and there were strong advocates for both solutions.

IT WAS OFTEN NOTED THAT DECARBONISATION WILL ALWAYS FACE CHALLENGES – BOTH ECONOMIC AND TECHNICAL

ASSESSING THE QUALITY OF CARBON CREDITS

In mid-2023, the Integrity Council for the VCM (ICVCM) published the final version of its Core Carbon Principles (CCP) Assessment Framework. It defines how carbon crediting programmes and their methodologies will be assessed for high quality, as a way of building integrity and scaling the VCM. The groups were invited to discuss related issues such as alternatives to the CCP binary “pass or fail” approach, and how the market could deal with credits that will not be CCP compliant. This extended to the role of rating agencies and risk-based approaches to quality, how to anticipate interplay with Article 6 requirements, and the role of discounting as a way to ensure conservativeness and address project uncertainties.

In summary:

- There was consensus that the CCPs are a big step forward, but not a magic bullet. They draw a line that will benefit the market but won't fix it alone. Quality is a combination of CCPs, project-level due diligence, and the quality of a project developer's work¹. There was concern that we could soon see many stranded credits

that won't achieve a CCP label, but on the other hand, that we should not let a legacy problem hinder the market and dictate the future. A risk-based approach to quality would ensure that all credits continue to be valued while the market transitions to CCP labels. Discounting of credits, based on a common formula, could play a role in this regard, potentially leading to differentiated uses and claims. On the other hand this approach was seen to add too much complexity to the market. Finally there was a request that we also need to give tools to buyers to understand the non-carbon benefits of projects that don't get the CCP badge such as biodiversity protection.

- The CCPs will be a very valuable decision-making tool for small buyers, who don't have the resources to run a due diligence process, less so for large corporates. Additional layers such as carbon credit ratings are useful, but participants flagged that the agencies' work is opaque. Greater transparency is needed across the four main players: Sylvera, BeZero, Calyx, Renoster. CCPs probably won't be the standard for everyone, everywhere: for some it may be CORSIA, or ICROA², or the growing list of host countries that will have their own standard and methodologies.

INCREASED INVESTMENT IN CARBON CREDITS TODAY IS A WAY TO BEND THE CURVE NOW BECAUSE CUMULATIVE EMISSIONS COUNT IN THE CLIMATE CHANGE CHALLENGE

1. Many requirements embedded in the CCPs will fall on project developers: there will be a cost for them to adjust, but it should be worth the effort.

2. ICROA assesses and endorses programmes that can be used by its Accredited organisations..



WHILE ICVCM IS WORKING TO SET THE BENCHMARK FOR CREDIT QUALITY AND VCM IS TRYING TO THE SAME ON CORPORATE CLAIMS, ENSURING BEST PRACTICE AMONG CARBON CREDIT RETAILERS SHOULD ALSO BE HIGH ON THE LIST OF PRIORITIES

THE ROLE OF INTERMEDIARIES IN PROMOTING GREATER INTEGRITY AND TRANSPARENCY

This is an important piece of the puzzle, sometimes overlooked. While ICVCM is working to set the benchmark for credit quality and VCM is trying to the same on corporate claims, ensuring best practice among carbon credit retailers should also be high on the list of priorities. Again, the list of issues discussed by the groups were diverse: appropriate levels of governance, ICROA's Accreditation for carbon credit retailers³ and its role for the industry, the role of intermediaries in enforcing the mitigation hierarchy (ensuring offsetting is only used in a science-aligned context), and the importance of reporting on benefit sharing and other transparency requirements. Just like we see new carbon crediting programmes emerging almost every other week, the number of new intermediaries is astounding. It is a sign of growth and opportunity, but – as with any other market – not all players are equal. Does everyone have the best intentions?

3. This includes project developers, traders, brokers, consultants and all-round service providers in this market.

In summary:

- There was consensus on the current lack of transparency (eg, on margins, benefit sharing), but acknowledgment that, in a voluntary market, this is hard to govern. Transparency can be addressed in the secondary market, but more transparency on the secondary market is not transparency on projects. The primary market will remain difficult, due to confidentiality of over-the-counter (OTC) bilateral contracts. It was suggested that ICROA could play a role in striving for greater transparency of financial transactions and push for better practices.
- Intermediaries have an important role in promoting greater transparency and integrity in the market. They also play a key role in identifying project risks and completing due diligence on projects to ensure the credits are high quality. As they provide education and guidance to corporates, including on how to credibly use and claim carbon credits as part of their net zero pathway, intermediaries are critical to the well-functioning of the carbon markets they operate in.
- The VCM is still in an infancy phase compared to mature markets such as financial markets. Licenses for intermediaries were suggested as a potential next step. Carbon crediting programmes also have a role to play by systematically requiring details on who retires and for what purpose in their registries. Individual country regulations and Article 6 requirements will also lead to greater standardisation. It is often contrary to an intermediary's interest to be completely transparent, until its activities become regulated. ICVCM will govern some aspects of financial transparency, but it could fall short of what corporates would like to see to invest.

BIOGRAPHY

Antoine Diemert is Director of the ICROA Accreditation Programme and works on VCM Policy with IETA. He has a background in corporate finance and worked for various financial institutions before entering the fascinating world of carbon markets. His main role with ICROA to enhance integrity in the VCM, in support of the Paris Agreement Goals.



THE CCPS ARE A BIG STEP FORWARD, BUT NOT A MAGIC BULLET

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