



TRANSFORMING TODAY'S GLOBAL CARBON MARKET FOR A SUSTAINABLE FUTURE

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TRANSFORMING TODAY'S GLOBAL CARBON MARKET FOR A SUSTAINABLE FUTURE

The global fight against climate change, and meeting targets under the **Paris Agreement**, are critically dependent on an effective, and trusted, high-integrity carbon market – inclusive of voluntary carbon markets (VCMs) and compliance carbon markets (CCMs).

This fight can be characterised as a **dynamic interplay** of immense opportunities and challenges with respect to establishing green and transition investment as a core priority, and ensuring that pools of capital are directed, unobstructed, in support of a more sustainable world.

Key to the transformation of today's global carbon market for a sustainable future are the delivery of solutions that connect fragmented market segments, expansion of innovative technologies and greater data reliability to enhance the credibility of carbon credits, and scale partnerships and collaborations that expedite democratised market access and more equitable capital distribution.

For example, currently the **EU Emissions Trading System (ETS)** emissions are approximately 47% below 2005 levels when it was first introduced and are on track to achieve the 2030 target of a 62% reduction, according to provisional estimates by S&P Global, evidencing that economic growth and emission reduction are not mutually exclusive objectives.

Closing the substantial **climate financing gap** – amounting to trillions of dollars annually – and aligning innovation and adoption with climate urgency – are transformational imperatives. At the same time, the opportunity to create a credible, reliable and transparent ecosystem through industry collaboration and technology innovation that underpins equitable capital distribution – particularly with respect to climate projects in the **Global South** and emerging nations – and democratises market access far outweighs current challenges.

After nearly a decade of work, countries have agreed on the final building blocks that set out how carbon

markets will operate under Article 6 of the **Paris Agreement**, making country-to-country trading and a global carbon crediting mechanism fully operational.

Article 6 creates two different types of markets. The first – known as Article 6.2 – includes the regulation of bilateral carbon trading between countries to exchange types of carbon credits called Internationally Transferred Mitigation Outcomes (ITMOs); while Article 6.4 creates a global crediting mechanism for countries to sell emissions reductions. Collectively these support climate action by increasing demand for carbon credits while ensuring that under the supervision of the United Nations, the international carbon market operates with integrity.

One of the major – and hard-won – outcomes of the **November 2024 COP29** meeting was agreement on a climate finance deal in which 23 developed countries and the European Union will pay developing nations \$300 billion annually “from all public and private sources” by 2035 to help them to manage the effects of the climate crisis.



“ The future of the carbon market lies in its ability to transform. By addressing fragmentation, fostering interoperability to interconnect siloes, integrating technology and ensuring transparency, we can build a system that not only reduces emissions but also supports sustainable economic growth in the regions that need it most. ”

Hirander Misra, CEO, ZER013

One thing is certain, doing nothing is not an option.

This Financial Markets iNSiGHTS report explores these opportunities and challenges, drawing on the experience and insights of financial, climate and sustainability experts to consider how processes, practices, technologies and financial innovations can be harnessed to gain investor trust and confidence, and to create attractive, sustainable and equitable finance mechanisms.

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INTRODUCTION

The global carbon market is a critical mechanism in the fight against climate change. By allowing countries, corporations, and organisations to offset their emissions, the carbon market provides a financial incentive to reduce global greenhouse gas levels.

However, for this mechanism to meet Paris Agreement targets, both the **voluntary (VCM) and compliance (CCM) carbon markets** must undergo a transformational reset as trusted, effective and high-integrity mechanisms with measurable climate and environmental impacts.

Reduced market fragmentation, increased trust, transparency and market credibility, closer alignment with sustainable finance mechanisms, and greater prioritisation of **green and transition investment** are critical to boosting impact and appeal to institutional investors.

The opportunity to deliver an ecosystem with partnerships, greater collaboration, sustainable and transition finance mechanisms, risk management and technology that deliver solutions far outweighs the challenges.

According to the [Africa Carbon Markets Initiative \(ACMI\) Status and Outlook Report 2024-25](#), the combination of significant collaborative initiatives that improve transparency and risk mitigation, and stronger corporate demand for long-term, nature-based **carbon credit offtake agreements** – both for sustained carbon removal solutions and to hedge against regulatory pressure, scarcity and price volatility of high-integrity carbon credits – has resulted in strong growth in the voluntary

carbon market in 2024. This growth trend is expected to continue – up from c.\$2.4 billion in 2024 to a forecast \$14.56 billion by 2032.

We are at the point in the carbon market innovation curve where adoption is focused on the challenges of complexity, and the lack of real understanding about what an excellence differential can look like in the near future, according to Professor Lisa Wilson.

VCM has the potential to deliver the transitional finance needed to address the urgent need for expeditious large-scale emissions reduction. The **World Economic Forum** and the **International Monetary Fund (IMF)** describe it as the key mechanism for mobilising investment in carbon reduction, removal and avoidance projects and enabling traditional capital to flow unobstructed towards the gap in climate finance.

Between 2005 and 2019, and following the introduction of the EU's Emissions Trading System (ETS), carbon emissions in the European bloc fell by 35% while over the same period GDP grew 42%. This demonstrates that tools do work, and that economic growth and carbon reduction are not mutually exclusive agendas. In contrast, Asia, which is set to provide around 60% of global growth in 2024 is responsible for almost 50% of global CO2 emissions ([source: www.weforum.org](https://www.weforum.org)).



“ We are at the point in the carbon market innovation curve where adoption is focused on the challenges of complexity, and the lack of real understanding about what an excellence differential can look like in the near future. Benchmarks driven by fear, crystal ball thinking, and an overly regulated regime will cause initiatives to fail before they've had a chance to succeed. Opportunity comes from understanding that climate innovation is focused much more on the future. Reducing GHG is the goal. ”

Professor Lisa Wilson, Global Head of Strategic Partnerships at Green Bond Corporation

Benchmarks driven by fear, crystal ball thinking, and an overly regulated regime will cause initiatives to fail before they've had a chance to succeed. At the same time "innovation impatience" means there is still negativity around ideas, processes and potential outcomes, rather than proactive acceptance of evolution and validation of what good looks like.

Opportunity comes from understanding that climate innovation is focused much more on the future.

Reducing GHG is the goal. Getting there means making mistakes and overcoming challenges. There is, nonetheless, huge motivation to create a new V2.0 carbon market model defined by improved governance, with more climate-aligned programmes that use technology like blockchain to engender trust and encourage market participants to act differently, with higher expectations.

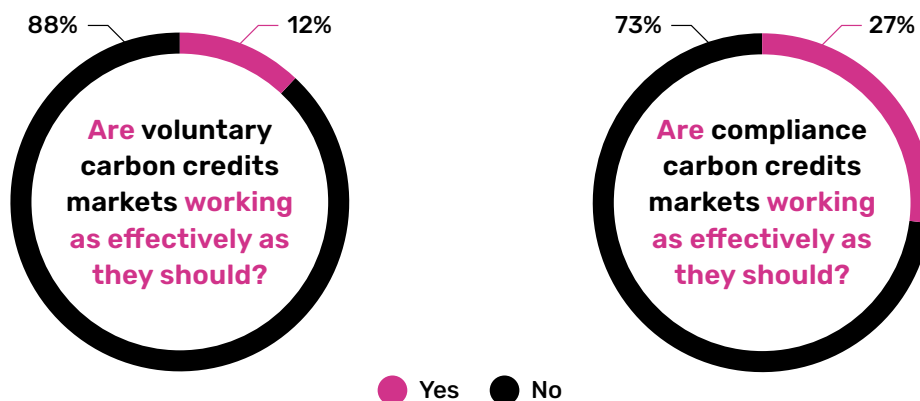
The challenges facing the carbon market are many: multiple international carbon offset standards and principles; inconsistent regulatory frameworks and competing commercial accreditation programmes; lack of transparency in transactions; limited connectivity to traditional financial markets and ineffective capital allocation that leaves high-impact projects underfunded. Additionally, the financing gap required to address climate change – running into trillions of dollars annually according to the **World Bank**, World Economic Forum and **UNDP** – remains unaddressed.

While the Paris Agreement made strides towards the creation of a global framework, slow adoption and previous lack of consensus prior to COP29 on key elements, such as Articles 6.2 and 6.4, means that critical carbon market trading mechanisms remain underdeveloped. Article 6.2 includes the regulation of bilateral carbon trading between countries to exchange types of carbon credits called **Internationally Transferred Mitigation Outcomes (ITMOs)**; Article 6.4 creates a global crediting mechanism for countries to sell emissions reductions.

Climate projects in the Global South particularly – crucial for global sustainability – struggle to attract necessary financing and typically receive inequitable benefits from current carbon finance mechanisms. Two key – and hard won – achievements of the November 2024 COP29 meeting – after nearly a decade of work – was full operationalisation of Article 6 of the Paris Agreement with respect to unlocking international carbon markets, and agreement on a significant increase in funding – to \$300 billion annually **by 2035** – by developed nations to support underdeveloped countries in managing the impacts of climate change.

To meet the scale of the climate crisis, the carbon market must undergo significant transformation. The integration of advanced technologies like blockchain and AI, the harmonisation of global standards, and a more equitable distribution of benefits are key to ensuring the carbon market can drive meaningful, lasting change.

Industry survey conducted by ZERO13, Autumn 2024



A FRAGMENTED MARKET

A critical, and inarguable, challenge to carbon market transformation is market fragmentation, typified by the plethora of validation, verification and 'best practice' standards and myriad registries, platforms and trading mechanisms. This lack of harmonisation inevitably creates inefficiencies, undermines global participation and perpetuates a lack of confidence and trust in carbon credit programmes (and associated investment assets).

This fragmentation is especially pronounced in the Voluntary Carbon Market (VCM), where the lack of a unified framework has resulted in challenges around credibility, fair value and compliance. The absence of recognised standards, and general lack of industry consensus around 'what good looks like' also impacts the effective implementation of Article 6.2 of the Paris Agreement concerning cross-border emissions trading which allows countries to exchange emissions reductions through types of carbon credits known as Internationally Transferred Mitigation Outcomes (ITMOs).



“ The carbon market's current structure is deeply fragmented, with different standards and registries competing rather than cooperating or collaborating. Fragmented standards

and inconsistent regulations further hinder the effectiveness of global carbon trading, and the associated financing gap continues to be a major obstacle to achieving sustainability goals. ”

Hirander Misra, CEO, ZERO13

Lack of consensus on how trades should occur, or how credits should be validated across borders, has resulted in an uneven playing field where some nations such as Singapore and Ghana are moving forward with ITMO related Article 6.2 activity, while others lag behind.



“ The market is essentially flawed from the perspectives of integrity, incentives, transparency and trust. We need to leverage technology like AI to demonstrate the integrity of credits to a much more granular degree beyond jurisdictional data; to show whether or not a particular patch of land absorbed carbon, or to confirm reforestation activities. ”

**Michael Sheren, Fellow, University of Cambridge
Institute for Sustainability Leadership**

Whilst Hirander Misra cited fragmentation as being an impediment to the carbon market, he also noted that he is seeing viable technology enabled solutions emerge which interconnect the disparate carbon market landscape bringing together market participants and the different services they need in a way that can scale.

INEFFICIENT, INEQUITABLE CAPITAL ALLOCATION

One of the primary challenges in the carbon market is ensuring that investments reach the climate projects that need them most – particularly in developing regions like the Global South, where the impacts of climate change are often most severe.

Many projects in these regions struggle to secure adequate funding, as capital tends to flow toward projects in wealthier countries with more developed financial infrastructures. This uneven distribution of investment not only exacerbates global inequalities but also limits the potential for climate projects that could have a significant impact on both emissions reductions and community resilience. Projects in **developing regions** like the Global South often don't receive fair economic benefits.

Transforming carbon credits into export commodities could empower these nations to benefit from carbon markets. As Dinesh Babu comments: "There's a significant financing gap, especially in the Global South. Projects often don't get the funding and resources they need."

It's crucial that capital is allocated more equitably to community development funds and benefit-sharing frameworks. **Participatory project development programmes** ensure that local communities share in financial gains at the same time as supporting sustainable economic growth."

Engagement with traditional capital markets and institutional investors is imperative if capital allocation is to reach the levels required, and to be distributed to the projects that require it. This is achievable if carbon markets educate capital markets sufficiently on how they are improving trust and transparency, and what the implications of 'source to sale' dMRV means to risk mitigation, insurance wrapping and independent carbon ratings. As Professor Wilson notes "Carbon markets must address the challenges and risks articulated by the buy side that limit their ability to actively engage and allocate assets. At the same time, institutional markets require investment remits devoid of complicated negative journeys and with portfolios that are investment grade – in their terms."

Local engagement is also vital for effective climate projects. Involving communities in the planning and implementation phases means projects can be better tailored to local needs and generate broader social benefits including job creation and enhanced community resilience.



“ There's a significant financing gap, especially in the Global South. Projects often don't get the funding and resources they need. It's crucial that capital is allocated more equitably to community development funds and benefit-sharing frameworks. ”

Dinesh Babu, Executive Director, Infrablocks Capital

“Ultimately they are the owners of the land, and the forests, and their efforts are driving corporate profits” says Suresh Yadav. “It’s critical to the viability and sustainability of projects to keep local communities happy and they must be represented alongside other stakeholders. No business or sector can thrive in the long term if local communities are not happy.”

A number of successful projects around the world have combined **carbon sequestration** with social initiatives like community forestry, supporting local livelihoods and contributing to global emissions reductions. Community-driven approaches to project development, aligned with the socio-economic and environmental realities of the locale, are recognised as delivering superior results in terms of sustainability and impact.

These projects are also more likely to foster long-term **ownership and stewardship** of the projects, ensuring that they endure beyond initial funding cycles. Initiatives such as those seen in Brazil’s agroforestry projects are examples of how participatory approaches can lead to success, benefiting both the local population and the global fight against climate change.

Once again, education is pivotal to greater industry understanding. Misinformation is rife in carbon markets on who does ‘what’ and ‘when’ during the project origination and carbon credit issuance phases.

Greater industry education that provides clarity around verification processes, and **quality benchmarking of harmonised frameworks**, are essential to democratisation of access and distribution. Another driver for success in improving capital allocation and distribution is the development of robust due diligence processes that include environmental and social criteria.

Gold Standard certification, for example, evidences carbon reduction potential and sustainable development goals such as biodiversity and community engagement. A holistic approach to project validation ensures that high-quality projects with benefits beyond reduction in emissions are prioritised for funding.



“ We must prioritise equity and inclusion, ensuring that investments not only reduce emissions but also create sustainable economic growth in the Global South. Benefit-sharing frameworks and greater prioritisation of projects with measurable social and environmental co-benefits are essential for ensuring equity in carbon markets. ”

Hirander Misra, CEO, ZERO13



BENEFIT SHARING FRAMEWORKS

The carbon market has long been criticised for the inequitable distribution of benefits, particularly between developed and developing nations.

Many projects in the Global South generate carbon credits that are sold to wealthier countries, but the corresponding financial benefits often do not trickle down to local communities. This inequality hinders sustainable development and stifles the potential for localised economic growth aligned with climate projects.

One approach to resolving this could be through transforming carbon credits into **export commodities** for developing nations, helping to build stronger local economies and driving broader participation in climate solutions.

Benefit-sharing frameworks that prioritise **equitable distribution** of revenues from carbon credits between project developers and local communities is an imperative in achieving environmental and social sustainability. For example, dedicated **Community Development Funds** allocate a portion of revenues from carbon credits directly to local development projects e.g. education and health facilities. Not only do local communities share in the financial and economic benefits of climate projects, carbon credits in this instance are contributing directly to improved quality of life.

Another solution is to ensure that leading projects incorporate '**progressive benefit distribution**' through which 30-50% of credit revenue goes directly to local communities along with performance-linked increases in local revenue share, aligning incentives directly with long-term project sustainability. The **REDD+ initiative** in indigenous territories illustrates this model, with its focus on protecting forests while ensuring that local populations, often the most affected by climate change, receive a fair share of the economic benefits generated.

With governance managed through blockchain-enabled community trusts, Monitoring and evaluation mechanisms, for example, **blockchain-enabled community trusts**, must be in place to provide appropriate governance and ensure that promised benefits reach the communities involved. Independent third-party audits provide necessary oversight, making sure that funds are used effectively and equitably. Together, these foster trust and engagement with local stakeholders, essential for long term project success.



“ The global carbon market faces a critical efficiency gap. Only 5% of carbon finance reaches projects in Least Developed countries, despite them hosting 30% of mitigation potential. A combination of results-based finance (combining private capital with development bank guarantees), standardised project development frameworks (reducing up to 70% of costs) and jurisdictional REDD+ programmes will unlock scale and ensure more equitable benefit distribution. ”

Vivien Claire Liew, Founder, PhilanthropyWorks

LEVERAGING TECHNOLOGY TO DELIVER MARKET TRANSFORMATION

Leveraging advanced technology for Digital Measurement, Reporting and Verification (dMRV), digital twinning, IoT, satellite monitoring and imagery, and the core infrastructure of blockchain and AI deliver assurance that projects using rigorous scientific methodologies meet the highest verification and compliance standards with transparency, traceability, and efficiency whilst ensuring optimised returns in the carbon market.

Blockchain and AI are core technologies transforming trust in carbon markets, particularly with respect to transparency, traceability, and efficiency. Blockchain creates immutable evidentiary records of carbon credit from source to sale origination, ensuring that every credit can be traced back to its origin (provenance) and tracked through every stakeholder interaction and activity, mitigating the opportunity and risk for double-counting or any other misrepresentation of credits.

Blockchain technology supports **decentralised registries**, offering greater accessibility and reduced administrative costs, particularly welcome to smaller-scale projects in developing regions. According to Suresh Yadav: "Transparency is very important, and technology is a great enabler. Satellite and blockchain technologies both enhance transparency from different perspectives: **Satellite technology** provides far more accurate geo and physical data – like measuring the carbon storage of a tree or plant, providing accurate intelligence about changes over time. Blockchain provides transparency around actors, owners and credit lifecycle activities. Together they provide the opportunity to mitigate challenges that undermined the renewable energy markets 20 years ago."

AI enhances **Monitoring, Reporting, and Verification (MRV)** processes that analyse satellite imagery, and other data sources such as IoT devices, to assess project outcomes and trends in real-time. This enables investors and regulators to monitor the effectiveness of carbon projects, and ensure that they deliver on their methodology requirements and sustainability promises.



“Blockchain technology is particularly valuable for transparency and trust, reducing fraud and increasing investor confidence.

Tamper-proof records of carbon credit transactions enhance monitoring and reporting accuracy, ensure clear provenance and reduce risks (e.g. double counting).”

Charles Kerrigan, Partner, CMS London

AI-powered **predictive analytics** and ability to analyse large datasets can help investors evaluate the future performance of projects for more informed decision-making, enabling stakeholders to adjust strategies as market conditions change.

Technology, AI and automation will further streamline trading, logistics and supply chains in all commodities and carbon markets, driving increased efficiency, reduced human error, and reduced costs. Wider use of blockchain technologies will also address transparency, integrity and trust challenges for market participants in what is likely to be a fairly volatile time, and is particularly essential for climate markets and **new carbon commodities**.

According to Professor Wilson: "All governments and private sectors must invest in these digital infrastructures, as well as processes to ease market friction and fragmentation, to achieve climate innovation inclusive of climate risk assessment. Regulatory change is not keeping up with technological change, or the pressing urgencies of climate commodities."

The **Climate Action Data Trust (CAD Trust)** which was founded by International Emissions Trading Association (IETA), the World Bank and the Singapore Government is a one example of the type of collaborative thinking that is required to establish workable solutions for climate markets. CADT is a decentralised, blockchain-enabled digital infrastructure platform that utilises a **common metadata model (CDM)** to share information about carbon credits and projects that in the future will facilitate integration of many carbon registries to efficiently enable verification of credit retirement reducing the risk of fraud.

Furthermore, integrating artificial intelligence (AI) into the carbon market offers the potential for

continuous, real-time analysis of environmental data, making it easier for investors and regulators to track project performance and compliance. AI's ability to analyse large datasets can also help detect early signs of project failure, enabling stakeholders to adjust strategies before it's too late. In addition AI could automate tasks such as the creation of **Project Design Descriptions (PDDs)**.



“ Digital MRV (dMRV) is transforming project economics, reducing verification costs significantly, and enabling authentic data to provide real time performance tracking to support smart contracts to leverage dynamic credit issuance and manage benefit distribution. ”

Vivien Claire Liew, Founder, PhilanthropyWorks



HARMONISING THE VERIFICATION AND ISSUANCE OF CARBON CREDITS

A critical factor in building a more effective and trustworthy carbon market is for all stakeholders to understand the verification processes required to issue harmonised, high integrity carbon credits.

"There are currently many international carbon offset standards required to be met, with dozens of competing organisations, each utilising its own suite of commercial **Independent Standards Crediting Programmes** that incorporate hundreds of scientifically rigorous carbon credit methodologies," says Hirander Misra. "This complexity creates confusion, increases compliance costs, and ironically, reduces market credibility. Harmonising internationally, both the understanding and the process of carbon credit verification and issuance, rather than who is using what standard is the only way forward. This needs to happen alongside a **global framework** that aligns voluntary and compliance markets to create cohesive environmental solutions."

The **International Carbon Reduction and Offset Alliance (ICROA)**, organisations such as the Integrity Council for Voluntary Carbon Markets (ICVCM) on the supply side, the Voluntary Carbon Markets Integrity Initiative (VCMI) and the **International Swaps and Derivatives Association (ISDA)** on the market side, are working towards the creation of common benchmarks to lay the foundations for a unified carbon market that creates a level playing field and ensures that all carbon credits – regardless of origin – satisfy stringent environmental and social criteria. As Michael Sheren says: "Making what are currently voluntary 'rules'

created by the ICVCM (sell side) and VCMI (buy side) into regulatory mandates would also help resolve the integrity challenge. Codifying the rules, making them binding and using technology to confirm and validate actions is an imperative to market transformation."

Independent ratings of carbon credit issuance is a key component of this transformation, strengthening the role of independent third-party auditors in validating that carbon credits meet the highest standards of environmental integrity and obviating the risk for fraud or misrepresentation. As Vivien Liew observes: "Market integrity demands the convergence of standards alongside methodological innovation and a framework built around **ICVCM's Core Carbon Principles**, Digital MRV protocols, regional adaptation of methodologies to reflect local contexts and specifically, harmonisation of adjustment mechanisms to support Article 6.2 of the Paris Agreement."

Standards (and compliance with standards) are very important for end to end transparency, establishing fair value and overall integrity. Uniform standards and validation mechanisms make it easier to value and incorporate carbon 'assets' within balance sheets and to demonstrate compliance with ESG and Net Zero obligations.



“ Major corporations and multinationals are keen for harmonised standards for measuring and accounting for the value of a carbon credit over time. Those providing the credits can validate and report value in a consistent way generating more positive market sentiment and greater investor confidence. ”

Suresh Yadav, Senior Director at The Commonwealth

ROLE OF GOVERNMENT POLICY AND REGULATION IN RESHAPING CARBON MARKETS

Government policy and regulation play a pivotal role in the future shape and success of carbon markets, and demand for carbon projects and associated credits.

Governments worldwide are implementing carbon pricing and emissions trading systems to support **national climate goals**, driving demand for carbon credits. India and Japan are just two countries that are developing their own carbon standards and compliance mechanisms, aligned with international frameworks.

Currently, companies aren't paying for (internalising) the damage they're doing to Earth via their carbon emissions or destruction of nature, suggesting a need for stronger incentives to mitigate or internalise negative externalities. "Rather than allowing removal credits to off-set emissions, buyers might instead get a **tax credit** to be applied towards capex or R&D that would be used to transform their business model to a sustainable one." says Michael Sheren. "Doing the right thing' should be a more straightforward decision with respect to making a real difference through the absolute reduction of carbon in business activities." However, this needs to be driven by consistent, jurisdictional and cross-industry policy to ensure that companies reinvesting profits in nature-first business transformation aren't penalised by investors.

Government policy mandates **corporate emissions reporting** with the objective of incentivising businesses to integrate sustainability within their operations. Beyond national and international carbon emission reduction targets, other governmental policy incentives include tax breaks for businesses that can evidence measurable reductions in emissions, directly and indirectly through credits.

According to Professor Wilson: "Governments are taking too long to negotiate far too complex agreements for Article 6.2 inhibiting **international offset** between nations but also devaluing great projects who could firm capital

allocation with revenues guaranteed on the balance sheets by futures and forward contracts."

Government policy has a critical role to play in shaping the carbon market. Failure of carbon markets to take off in many countries is the result of policy challenges and regulatory uncertainties. In particular, Governments' role is to regulate and incentivise stakeholders – markets, companies and individuals.

Beyond policy, while market failures may be local, solutions are global which is where international cooperation and multinational organisations come in. As Suresh Yadav says: "National governments need to work with international organisations and financial institutions, bringing the private sector in to ensure markets can be revived, accelerated and sustained. **Global, harmonised regulation** is essential for progress. Policies are vital, but effective administration of policy requires regulation. Policy and regulation needs to work in tandem, and as a dynamic exchange, one feeding into the other to address evolving challenges."



“ A company emitting 100s of tons of carbon may buy up carbon credits to offset them but is this doing anything to protect nature? A better incentive might be tax relief on, say, 50% of corporate profits used for capex and R&D that demonstrates actual carbon reduction and can be audited and reflected in balance sheets and annual reports. ”

Michael Sheren, Fellow, University of Cambridge
Institute for Sustainability Leadership

CORPORATE RESPONSIBILITY

Corporate responsibility is a vital aspect of carbon market evolution but there are concerns that despite regulatory frameworks and mandated carbon reduction and sustainability goals that there is something of a gap between actions and words.

Corporate Net Zero commitments, mandated emissions reporting and carbon offset strategies don't, in and of themselves, reduce net emissions.

Motivating corporates to take meaningful action to adopt more sustainable practices needs further incentivisation, through tax benefits, participation in 'cap-and-trade' systems, certification programs and public recognition for sustainability efforts.

"The term carbon neutral associated with carbon credit off-setting is arguably legal greenwashing, since all companies continue emitting carbon into the air after purchasing avoidance credits, not actually removing any emissions from the air," says Michael Sheren. "However, genuine removal credits are limited and comparatively expensive: J P Morgan, for example, has invested in a project in Iceland that literally sucks carbon out of the air with giant fans, powered by geothermal (green) energy. Similarly, Google is looking at a deal to build 10 nuclear reactors and Microsoft is looking to open nuclear plants to power "green data centres". These massive businesses know they have to 'go green' but recognise that the answer isn't buying up low integrity credits."

Accelerating CO2 reduction to address climate change a dual approach by corporates is important: Carbon offsets relating to carbon reduction continue to play a major part in corporate sustainability strategies, but should be combined with carbon removal credits and wider decarbonisation activities.

Cap and trade systems (aka emissions trading systems) aim to reduce greenhouse gas emissions by capping the total amount of emissions released, with allowances that can be bought and sold in the carbon market. The cap is reduced over time, forcing participants to reduce emissions accordingly. A cost-effective system, participation in cap and trade systems may be a consumer choice differentiator.

Examples of ETS schemes today include the UK Emission Trading Scheme (ETS), and the EU Emissions Trading System which regulates companies like power plants, industrial plants, and airlines. In the US, an early example is the Acid Rain Program that reduced 1980 levels of sulphur dioxide emissions by 50% by 2007.



“ We welcome a shift in corporate responsibility with respect to greater integration of carbon strategy with climate targets, from pure offsetting to more strategic action around supply chain decarbonisation (insetting) to long term off take agreements that support project development. ”

Dinesh Babu, Executive Director, Infrablocks Capital

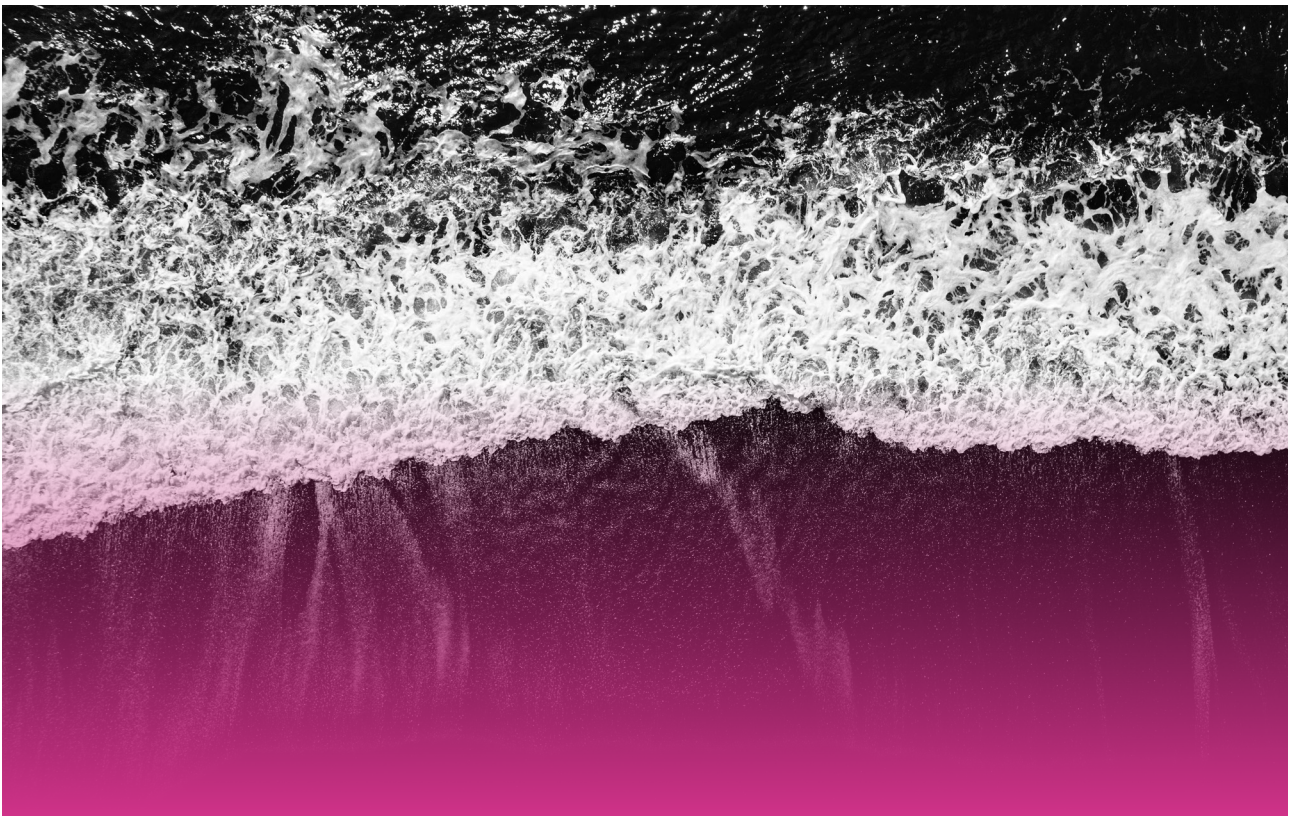
We need to shift the narrative that profit and corporate responsibility are mutually exclusive. Evidently, some multinationals in developing countries have failed to adequately address social responsibilities, and others see CSR as a cost that impacts shareholder value creation. This needs to change, recognising social responsibility as a positive business driver and quantifiable value.

Companies often use credits as an alternative to business model transformation to reduce their own carbon footprint. There's a strong view from many within the international community – and from highly respected organisations – that **high integrity removal credits** should be available only to companies that have already reduced their carbon emissions by a significant amount to offset, say, the last 10% necessary to achieve Net Zero emission targets. As Michael Sheren comments: "Allowing off-sets to be a primary corporate tool for emission reduction is a massive dis-incentive for companies to make real changes to physically reduce their corporate emissions attributed to their business activities."



“Corporates that are doing a good [CSR] job should be recognised appropriately, not penalised by investors chasing profit. One way to incentivise good behaviour is through formal CSR ratings that can be used by investors in their decision making processes (like credit ratings today).”

**Suresh Yadav, Senior Director at
The Commonwealth**



TAPPING INTO THE POTENTIAL OF A FAST GROWTH MARKET

As the world's focus on climate change intensifies, the carbon market is poised for significant growth, influenced in large part by increasing focus and pressure on corporates' Net Zero commitments, and NDC (Nationally Determined Contribution) ambitions.

At the same time, technological advances, improved transparency and a focus on social equity will prime the market for expansion.

According to the "[Modelling the Economics of Article 6: A Capstone Report](#)" by IETA, the global ITMO market is currently valued at around \$100 billion and is expected to grow steadily. Projections suggest that by 2050, the market value of financial flows under **Article 6** could exceed \$1 trillion annually, driven by increased global carbon prices and cooperative implementation of Net Zero targets.

Projections for the global carbon credit market suggest an exponential increase in value by 2030 (some forecasts are in the region of \$13 trillion) according to estimates by **Precedence Research**, and the Voluntary Carbon Market shows similar potential for enormous growth with **Bloomberg NEF** estimating it could reach \$1 trillion by 2037.

Whichever way you cut the numbers, there is enormous opportunity for investors, financial markets and economies to benefit from climate and nature focused opportunities.

Many countries are beginning to implement or enhance carbon pricing mechanisms and emissions trading systems, which will further fuel demand for carbon credits. Corporations increasingly recognise the value of sustainability beyond compliance in terms of enhancing brand reputation and customer loyalty.

Corporations and companies investing in carbon markets can showcase their commitment to sustainability and environmental responsibility. Companies need to change their business model and, says Michael Sheren, "The only real way to decarbonise is through capital expenditure, in R & D, procurement and operational changes to the way they do business. Microsoft, for example, has made significant investments in carbon credits, demonstrating positive action aligned with broader sustainability goals.

Carbon Credit Global Market Value Projections

Year	Market Value Estimates	Key drivers
2023	\$100 billion	Initial adoption and pilot projects
2030	\$250 billion	Increased cooperation, cost effective NDC implementation
2050	\$1 trillion	Global carbon price rise, cooperative Net Zero targets

Source: Modelling the Economics of Article 6: A Capstone Report

As Dinesh Babu says: "There is a clear trajectory of growth for the carbon markets, driven by corporate commitments to Net Zero and regulatory frameworks like the Paris Agreement. The question now is how to ensure that this growth benefits everyone, not just a select few. Growth must be inclusive and focused on supporting projects in regions that have historically been left behind, like parts of Africa and Southeast Asia."



“ Climate risk assessment as a commodity must be considered 'business as usual' by all sectors of the economy to mitigate investment risk. Most important is an ecosystem approach that enables all climate market 'moving parts' to work in harmony and scale at the necessary pace. ”

Professor Lisa Wilson, Global Head of Strategic Partnerships at Green Bond Corporation



A CLARION CALL FOR COLLABORATIVE ACTION

Creating a transparent and equitable carbon market is not only necessary for achieving global climate goals but also for driving sustainable development, particularly in the Global South.



“ The future of the carbon market lies in its ability to transform. By addressing fragmentation, fostering interoperability to interconnect siloes, integrating technology and ensuring transparency, we can build a system that not only reduces emissions but also supports sustainable economic growth in the regions that need it most ”

Hirander Misra, CEO, ZERO13

By embracing innovation and working collaboratively across borders, stakeholders can build a carbon market that supports environmental and social outcomes, ensuring that all countries, communities, and corporations contribute to – and benefit from – efforts to stall climate change.

Creating a **transparent and equitable carbon market** is not only necessary for achieving global climate goals but also for driving sustainable development, particularly in the Global South. By **embracing innovation** and working collaboratively



“ Younger generations are more informed about climate threats and challenges than the previous ones; they've grown up with the climate change narrative and consume

huge amounts of information through technology-led rather than traditional channels. Mobile phones today are the equivalent of 90s supercomputers. Compute power, and the power of information at fingertips, is going to continue to multiply exponentially. ”

Suresh Yadav, Senior Director at
The Commonwealth

across borders, stakeholders can build a carbon market that supports environmental and social outcomes, ensuring that all countries, communities, and corporations contribute to – and benefit from – efforts to stall climate change.

Carbon transition, harmonisation and full potential growth can only happen with **greater collaboration**, and a mindset shift with financial market investment instruments that shift carbon from being a cost to an asset.

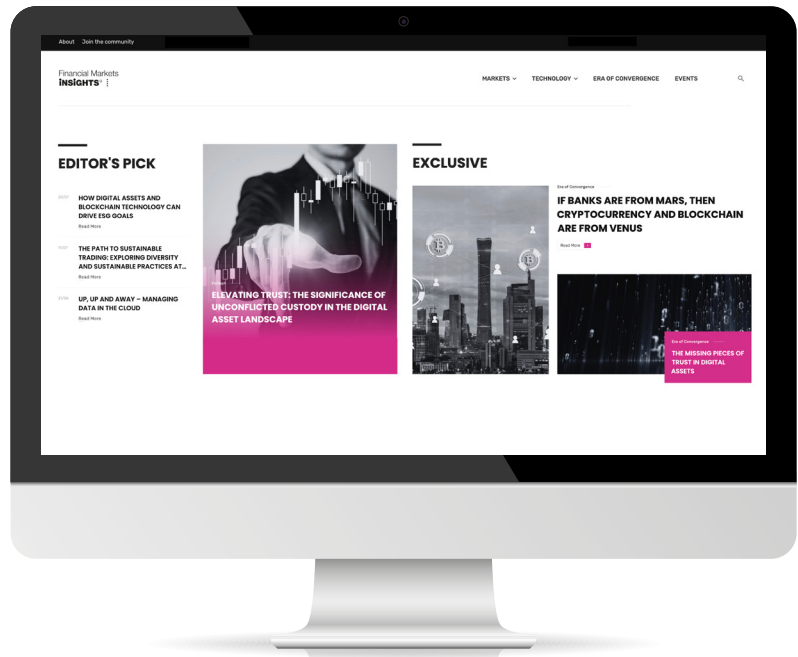
The industry and the experts within it must continue to work hard to remove negative perceptions that will continue to limit asset allocations in the vast sums required.

The journey toward a more efficient and equitable carbon market has only just begun, but the potential is enormous. Industry collaboration is essential to achieve the interoperability required to scale the carbon market and interconnect the different pockets of activities. The convergence of sustainable finance, advanced technology, and inclusive governance offers a unique opportunity to reimagine the market as a force for global good – one that truly supports the sustainable future we so desperately need.

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