

SPECIAL REPORT: SEIZING THE CARBON TRADING OPPORTUNITY.

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FOREWORD.

In global efforts to reverse the effects of the climate crisis, several solutions have emerged as real possibilities to turn the tide in the fight. In recent memory, carbon markets have grown as a viable asset class and are now viewed by many as a potential ‘game-changer’.

Even though they are not as regular in the environmental discourse as more mature solutions like renewables and future fuels – carbon markets are no less significant. These markets work by providing economic incentives for companies to reduce their environmental footprint by offsetting unavoidable emissions against credits or projects that absorb carbon elsewhere in the world. In addition, these markets provide an economic incentive to support nature-based solutions including forest conservation projects, as well as investment in new technologies focused on carbon renewal. It also creates a market to trade and invest in carbon as a commodity, not just as an offset play.

However, while promising, key questions remain about how we can not only use carbon trading as a tool, but also how we can get the most out of it. In this report, we explore how both technological and financial power will be necessary to fully tap the carbon markets solution – to ensure it becomes front and centre of climate action in the near and medium term.

We also look at the UAE’s capacity to turn the climate crisis into an immense opportunity as it deploys ingenuity, investment, and innovation. Here we assess where carbon trading fits into the nation’s environmental objectives.

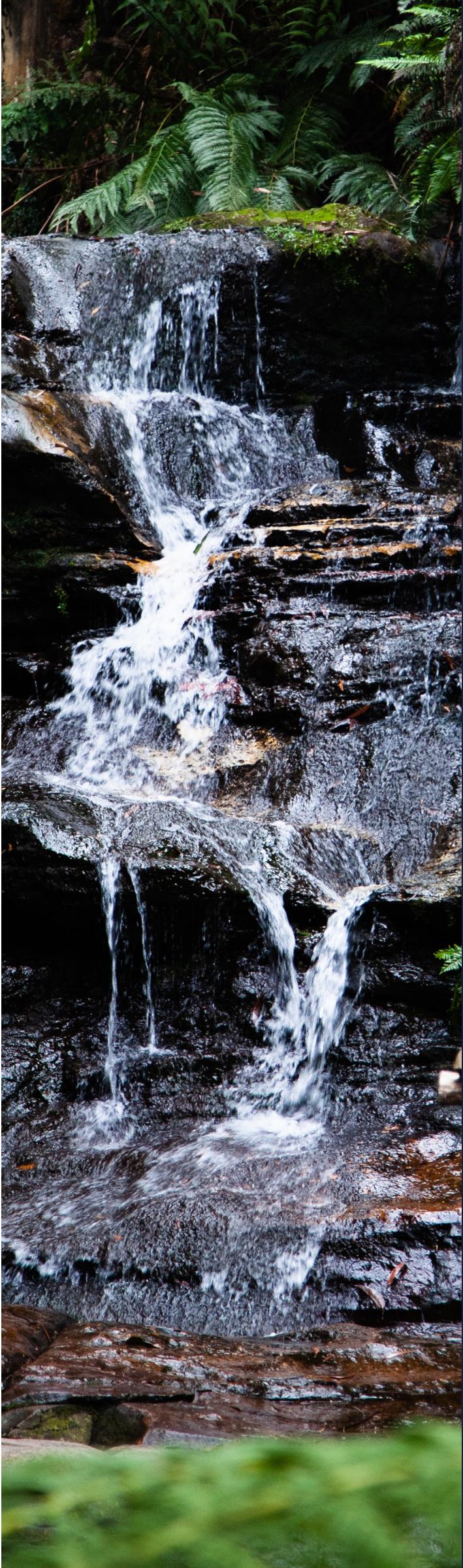
Furthermore, we also take a deep dive into how Abu Dhabi is taking decisive steps to establish the regulatory environment necessary to ensure emissions trading can become a mainstay in the climate fight.

With our perspective as one of the largest banks in the region and with our unique window into the UAE economy, we provide projections and recommendations on the development of carbon trading such as the global need to have more guidelines and standards alongside better reporting, greater transparency and disclosure. Overall, we believe that carbon trading will become a growing discipline, and financial institutions will be able to communicate the opportunities that it creates across various sectors.

Shargiil Bashir
Group Chief Sustainability Officer, FAB



“These markets work by providing economic incentives for companies to reduce their environmental footprint by offsetting unavoidable emissions against credits or projects that absorb carbon elsewhere in the world.”



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INTRODUCTION.

As the world moves towards net zero carbon emissions in 2050, there is clear political momentum to address climate change. Despite the increasingly challenging global macroeconomic environment, a number of events during 2022 have further galvanised efforts to decarbonise the global economy.

Most obviously, extreme weather events – including unprecedented heat waves in parts of Europe, forest fires in the US and devastating floods in Pakistan – have brought home to many that global warming is not a challenge for the coming decades: it is already destabilising weather systems and causing disruption, loss of life, and economic hardship.

At the same time, the invasion of Ukraine by Russia and subsequent sanctions have prompted volatility in energy markets, undermining economic growth and prompting governments in a number of countries – most notably in Europe – to step in with costly support for consumers and businesses.

For many observers, the vulnerability of the global economy to weather events caused by climate change as well as to geopolitical developments such as those impacting energy markets have underscored the necessity of accelerating the transition to net zero carbon emissions.

Clearly, addressing climate change requires a wide variety of responses, most of which must be focused on initiatives that directly reduce the level of carbon emissions entering the atmosphere by switching from fossil fuels to greener resources. The United Arab Emirates (UAE), which announced its Net Zero 2050 initiative in October 2021, has rightly prioritised clean energy projects, transportation initiatives, innovation in agriculture, and improvements to the legislative and regulatory landscape to improve the sustainability of infrastructure development.

However, the scale of the climate challenge is so vast – and the time available so short – that new technologies and solutions to directly lower carbon emissions must be augmented by other tools. One markets-based solution is carbon trading, which can provide economic incentives for companies to reduce their environmental footprint by offsetting unavoidable emissions against credits or projects that absorb carbon elsewhere in the world. Importantly, these markets also provide an economic incentive to support nature-based solutions including forest conservation projects, as well as investment in new technologies focused on carbon renewal.

The UAE has ambitions to be at the forefront of carbon emissions trading. The Financial Services Regulatory Authority of the Abu Dhabi Global Market (ADGM) has developed a framework to support carbon as a commodity. Working with AirCarbon Exchange (ACX), a digital carbon trading exchange, ADGM has established a trading exchange and clearing house, enabling corporates to trade and finance carbon credits in the same way as conventional financial assets. Crucially, ACX is the world’s first fully regulated voluntary carbon exchange and carbon clearinghouse (See **ACX case study** on page 7).

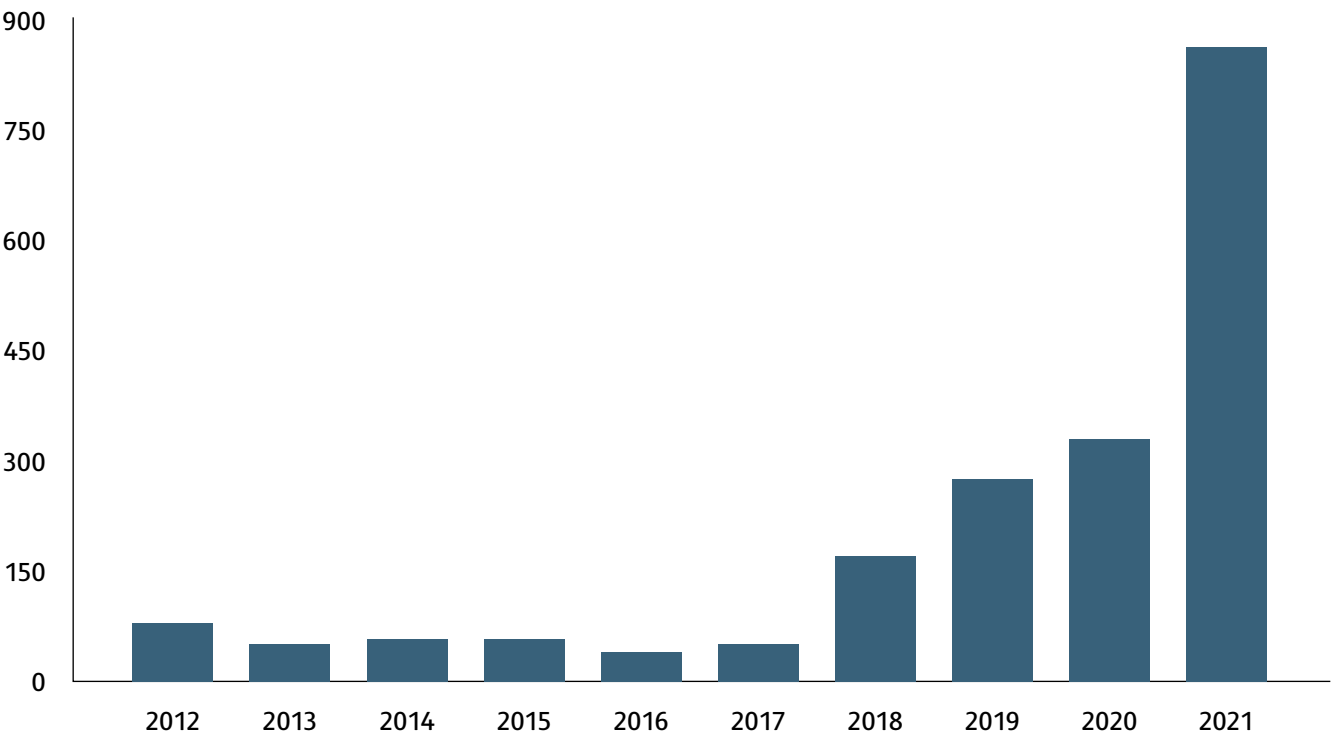
The role of carbon trading – and voluntary carbon trading in particular – remains controversial. But the robust regulatory environment established by ADGM will help ensure the credibility of the market, build confidence among participants and other stakeholders about the benefits of carbon trading, and mitigate concerns about the potential for greenwashing. Carbon trading can never be the sole solution to addressing climate change – but it should be part of the world’s toolkit given the impossibility of decarbonising the entire global economy immediately. The UAE’s farsightedness in developing carbon trading will further bolster its global voice in efforts to achieve net zero by 2050.

 **>\$750bn**
Global carbon market
annual trading value (2021)

Global Compliance Carbon Market Annual Trading Value

FIGURE 1

Global Carbon Trading Value (USD Billion)



Note: Refinitiv values include spot, auctions and futures but not options
Source: Refinitiv, Credit Suisse



THE CARBON OPPORTUNITY EXPLAINED

What is carbon?

Carbon is an abundant chemical element. It exists in pure or nearly pure forms – such as diamonds and graphite – but can also combine with other elements to form molecules. These carbon-based molecules are the basic building blocks of humans, animals, plants, trees and soils. Some greenhouse gases (GHG), such as carbon dioxide and methane, also consist of carbon-based molecules, as do fossil fuels, which are largely made up of hydrocarbons (molecules consisting of hydrogen and carbon).

What are carbon markets?

Carbon markets are trading systems in which carbon credits – certificates representing quantities of GHGs that have been kept out of the air or removed from it – are sold and bought. There are broadly two types of carbon markets: compliance and voluntary. Compliance markets have been created under national, regional and/or international policy or regulatory requirement. Voluntary carbon markets – national and international – refer to the issuance, buying and selling of carbon credits, on a voluntary basis.

History of carbon markets

The Kyoto Protocol in 1997 established the first international carbon market system. Since then there has been substantial growth and evolution of the markets. A key recent global development was the approval of Article 6 – the Paris Agreement’s rulebook governing global carbon markets – at the UN’s COP26 in 2021. This gave the green light to a market where countries can trade carbon credits generated by the reduction or removal of GHG emissions from the atmosphere, including by switching from fossil fuel to renewable energy or by increasing or conserving carbon stocks in ecosystems such as forests.

Why are carbon markets important?

For decades, carbon markets have been seen as part of the solution to climate change. Reducing GHG emissions is becoming urgent as countries around the world experience the intensifying impacts of climate change. Carbon markets help mobilise resources and reduce costs to give countries and companies the space to support their decarbonisation efforts.

What kind of carbon solutions exist?

There are several carbon reduction solutions in operation, some nature-based, others engineered. Examples of nature-based solutions include allowing forests to regrow, restoring coastal wetlands, and switching to restorative agricultural practices, such as cover crop rotation, that support healthy soils. These ecosystems reduce climate change by capturing CO2 from the air and sequestering it in plants, soils, and sediments. Engineered approaches include bioenergy with carbon capture and storage, direct air capture with carbon storage, and ocean alkalization.

THE CARBON TRADING OPPORTUNITY.

With efforts to decarbonise the international economy and curb global warming accelerating, governments, regulators, businesses, investors and other stakeholders are deploying a wide range of tools and technologies. The UAE has taken a visionary approach to sustainability, leveraging its advantages in renewables generation and pursuing ambitious plans to decarbonise its economy, which historically has been dominated by fossil fuels.

“The UAE recognised that sustainability would play a crucial role in the future so it was imperative to get ahead of the curve,” says Shargiil Bashir, chief sustainability officer at First Abu Dhabi Bank. “The UAE was the first country in the region to ratify the Paris Agreement on climate change. More recently, the UAE showed strong leadership in October 2021 when it announced its Net Zero 2050 initiative: a bold and important commitment for a fossil fuel economy.”

As Bashir notes, there are many existing technologies that will have an important role to play in reaching net zero in 2050, including wind, solar and efforts to improve energy efficiency. “But many of these technologies are already mature and while they have made major contributions to reducing carbon emissions, it is clear that they cannot deliver everything the world needs. Instead, innovation – both technological and financial – will be critical. Carbon trading is currently relatively immature but could be a game changer in the coming decades.”

According to Emmanuel Givanakis, chief executive officer of the Financial Services Regulatory Authority (FSRA) of ADGM, carbon trading can play an important part in the UAE’s sustainability agenda. “The UAE is a commodity-driven economy but is rapidly diversifying and its sustainability agenda is part of that journey,” he says.

With that in mind, the UAE further strengthened its claim to regional and global leadership of the net zero 2050 agenda with an announcement in March 2022 of the world’s first fully regulated voluntary carbon trading exchange and clearing house in partnership with ACX, a digital carbon trading exchange. ACX, which is expected to launch in late 2022, will be established as a recognised investment exchange and will be regulated by the FRSA. “Having a spot commodity market and a derivative market in environmental instruments, including carbon credits and offsets, will play an important role,” says Givanakis.

He believes the decision to launch a voluntary market enables the UAE to capture a valuable opportunity. “The world’s largest companies are becoming more involved in voluntary carbon markets to ensure their own sustainability agenda, which can be driven by their internal governance commitments and obligations as well as external exigencies,” says Givanakis. In particular, companies that are large carbon emitters are taking pre-emptive steps in advance of mandatory targets by looking for ways to offset the damage they do in response to pressure from a variety of stakeholders.

Bashir notes that all four groups of major stakeholders – consumers, employees, investors and regulators – are now focused on carbon emissions. “Many groups of customers, especially millennials and Generation Z, are now willing to pay a premium for a sustainable product or brand. When it comes to employees, in order to attract the best talent, companies need to be able to demonstrate how they are working to lower emissions and improve sustainability so that employees will feel proud to work for them,” he says. “Sustainability is already key for investors: by 2025, ESG-linked assets are likely to exceed 50% of assets under management globally, according to Deloitte; by 2030, this could reach 85%. And regulators have already demonstrated that sustainability is top of their agenda, with the UK regulator for example requiring large companies to disclose their climate impact.”



85%

The estimated percentage of ESG-linked assets under management globally by 2030.

WHAT IS CARBON TRADING?

There are two types of carbon emissions trading systems.

1. Compliance carbon markets (CCMs) use a cap-and-trade mechanism, with companies in carbon producing sectors – though not all; aviation is excluded in some markets, for instance – allocated certified emissions reduction credits consistent with a target set by government on emissions.

Emitters must hold allowances for every tonne of carbon (or other greenhouse gas) they emit. Companies that anticipate they will emit more than the credits they hold may buy allowances on an open market from companies that have an excess of allowances. Importantly, an inbuilt shortage of credits should ensure that in most instances it is advantageous for companies to seek ways to actually reduce emissions.

CCMs have existed in a variety of forms for many years. The best-known is the European Union’s Emissions Trading System, which launched in 2005. But for a long time, these markets were held back by the artificially low price of allowances – especially during the recession that followed the financial crisis of 2008 – and cumbersome market practices. These hurdles have now been overcome and CCMs play an increasingly important role in efforts to reduce emissions.

2. Voluntary carbon markets (VCMs) are less mature and smaller than CCMs but exist in Singapore, Sydney, New York and London; the voluntary market is growing rapidly. In VCMs, companies purchase carbon credits (usually from project developers) derived from the avoidance or removal of emissions in order to offset unavoidable operational emissions. By definition, there is no compulsion for corporates to transact. However, pressure from consumers, shareholders, lenders, governments and other stakeholders has prompted many companies to outline net zero targets for 2050.

While reducing operational emissions through efficiencies and using alternative technologies and inputs in their activities must be the primary objective of such companies, many are turning to VCMs to offset hard to reduce emissions.

“Carbon trading is currently relatively immature but could be a game changer in the coming decades.”

WHAT APPROACH IS THE UAE TAKING?

Voluntary emissions trading has grown rapidly in recent years, but according to Givanakis, most of this activity is currently on a bilateral OTC basis. “There is an appetite for greater transparency which can be facilitated through the buying of offsets and carbon credits on a well operated, transparent and regulated exchange that abides by international standards, including with respect to validation and verification as well as third-party registry services,” he explains. William Pazos, co-founder and managing director of AirCarbon, agrees there is a business imperative: “Regulating carbon opens up the market to the full suite of financial tools; leverage being a salient example”.

ADGM will be the first jurisdiction in the world to regulate carbon credits and offsets as emissions instruments in a voluntary market. This regulation should promote transparent price discovery and efficient trading, enabling companies to trade

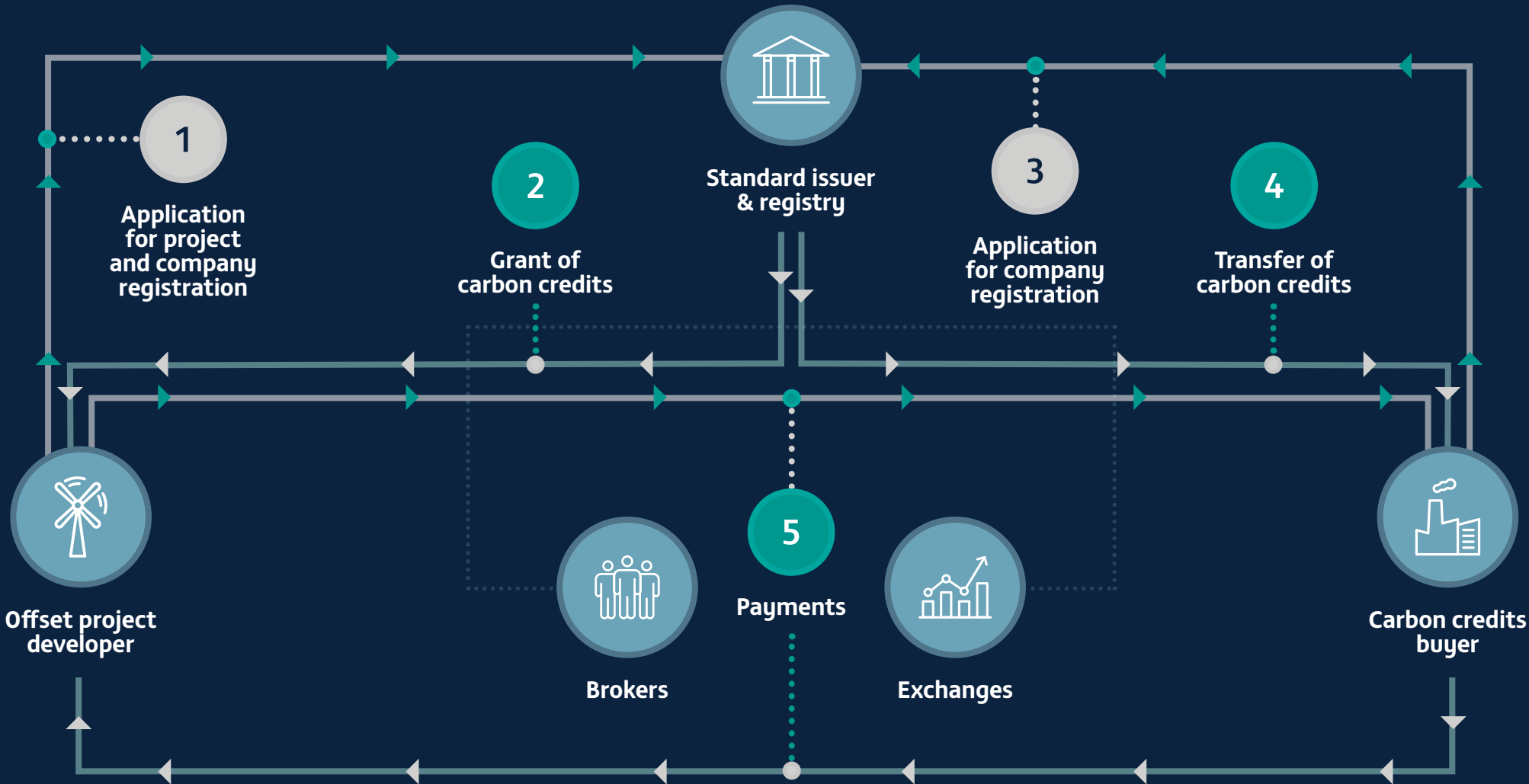
and finance carbon credits in a similar way to conventional financial assets. That should, in turn, facilitate greater investment in global carbon emission reduction and spur projects such as afforestation and renewable energy.

ACX will also be powered by cutting-edge technology, using distributed ledger technology (DLT) to create tokenised carbon credits for spot trading. “Each transaction occurs within a smart contract eliminating settlement risk,” says Pazos. The use of blockchain ensures instantaneous settlement and occurs within a public chain. “This provides an immutable and timestamped record of all transactions.” In answer to concerns about the environmental impact of DLT, Pazos says ACX’s blockchain “is based on Proof of Stake and does not require energy intensive mining”.

“Regulating carbon opens up the market to the full suite of financial tools; leverage being a salient example.”

How the Voluntary Carbon Market works

Source: EY



Process outline

In VCM, developers of offset projects apply to private entities, called standards, to certify their project and prove the amount of carbon emissions avoided, decreased or removed. Once certified, the developer can obtain voluntary carbon credits (VCCs). One carbon credit represents 1 tonne of CO2 emission reduction.

VCCs are stored at a registry owned or retained by the standard that certified the project. The developer can either retire the credits or sell them to another entity owning an account at the registry. VCCs can be traded by various institutions involved in the process, including brokers, exchanges, retail traders and advisors. VCCs issued by a given standard and stored in a registry managed or retained by this standard cannot be transferred to a registry of a different standard.

ENSURING A CREDIBLE MARKET.



In considering the establishment of a market for carbon credits and offsets – and to enable them to be seen as accepted spot commodities – the FRSA of ADGM had a number of objectives. As a risk-based regulator, its first goal was to identify risks to mitigate. “Among the most important of these is disclosure,” says Givanakis.

Mariam Alqubaisi, head of sustainability at flag carrier Etihad, welcomes the prioritisation of disclosure. “It’s essential that any carbon exchange is managed properly and that it is part of a transparent reporting regime so that carbon trading is not simply used for greenwashing,” she says.

Indeed, there is a need for regulation and disclosure requirements, for example around the percentage of emissions reduced through offsets. To avoid the risk of greenwashing, which threatens the sustainability agenda, clear guidelines and controls are critical. “Companies should not be able to claim they are reducing their emissions if they are doing so solely through carbon trading,” says First Abu Dhabi Bank’s Bashir. Instead,

trading must be part of a broader plan that reduces operational emissions and uses trading where emissions cannot currently be cut. For instance, data centres are critical to all businesses as they have moved to the cloud. “But there are currently no sustainable ways to power most data centres,” notes Bashir. “Carbon trading therefore might make sense in such a situation. But there is a real risk that CEOs and CSOs – faced with pressure from their stakeholders – will just go into the market and buy credits to placate them.”

Another closely linked area of focus for the FRSA when it was evaluating the application to open the carbon credits and offset market was verification and validation. “It’s important to have internationally recognised and respected entities responsible for these functions to ensure that the market is based on accurate, reliable and meaningful information and methodology, and that adequate systems and controls are in place, including a third-party registry of offsets,” says Givanakis.

Verification and validation are critical because of the range of variables relating to carbon trading, such as

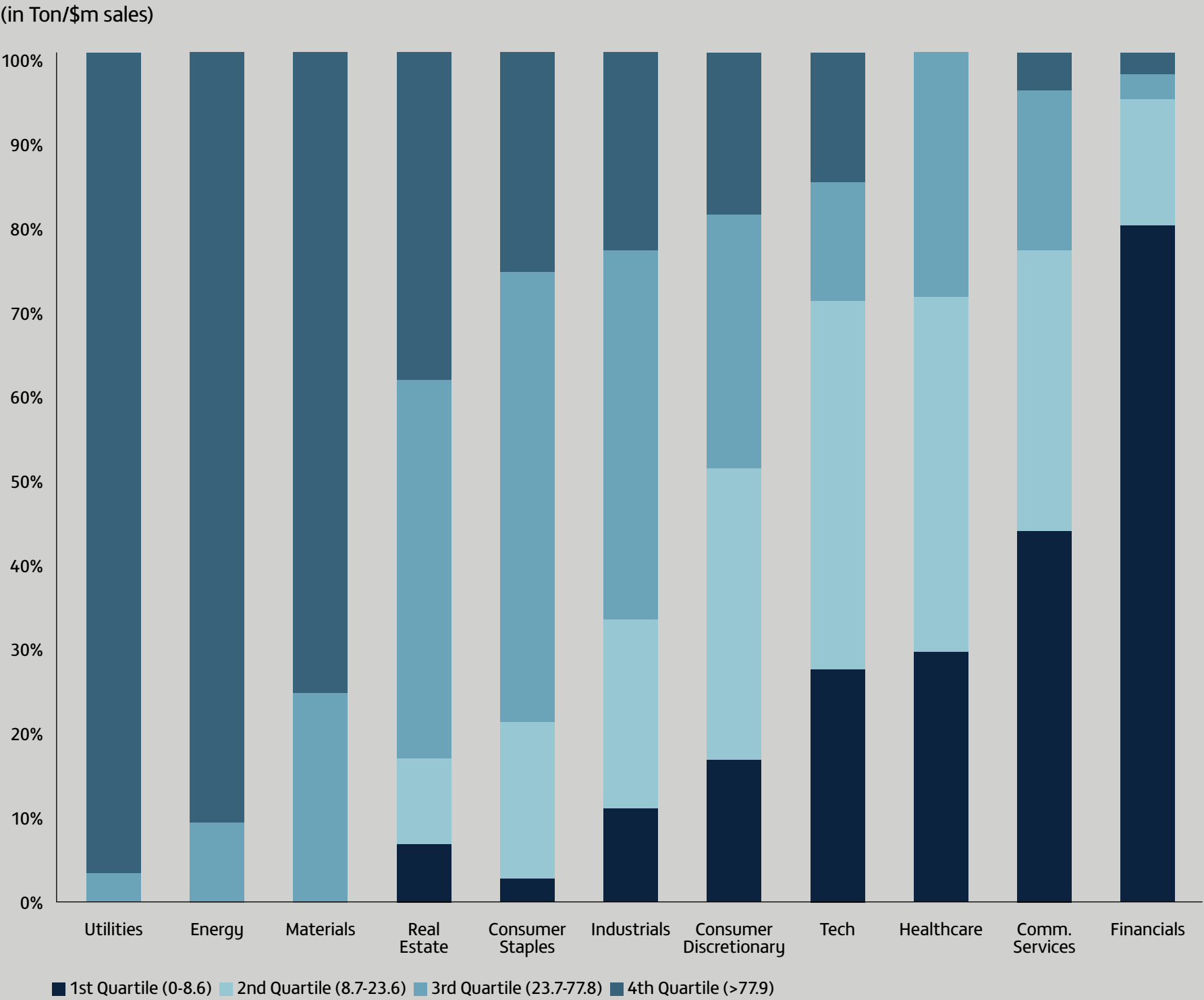
whether it relates to avoidance or reduction. “Ultimately, the market requires confidence that a metric ton of carbon is exactly that,” says Givanakis. “In our assessment, it’s also important to fully understand the risks associated with any market, including volatility risk, which can result in price swings and market manipulation, where the market is small and shallow. As part of the regulatory licensing process, we have to be confident that these issues are addressed before an entity is allowed to run a carbon market.” ACX is proposing to use the Verified Carbon Standard (Verra) for validation, verification, registry services and auditing.

Finally, environmental instruments will be recognised as an accepted spot commodity only if there is adequate post-trade settlement, safekeeping and reporting solutions in place, prerequisites that ACX has met, according to Givanakis.

“Ultimately, the market requires confidence that a metric ton of carbon is exactly that.”

High and low carbon intensive industries
Breakdown of companies in each industry in 1st (lowest intensity) through 4th (highest intensity) carbon quartiles

FIGURE 2




Source: MSCI, Credit Suisse

EVOLUTION SEEMS INEVITABLE.

ACX has applied for a licence to operate a spot environmental instrument market with a derivatives market expected to follow. Givanakis believes that ACX could have regional and even global appeal. “There are a limited number of voluntary markets in existence, so there is potentially a significant opportunity for ACX. More importantly, many of the current voluntary transactions globally are bilateral in nature: there is a need and desire to move to regulated exchange-traded environmental instruments – which comply with all of the regulatory requirements associated with such a market – in order to improve transparency.”

Importantly, there is no reason why an emissions trading system based on mandatory cap and trade frameworks – such as those that exist in the EU and in California – could not be created in the UAE in the future: the voluntary ACX may not be the end of the story. “The framework that we are introducing will provide for the establishment of both an ETS within ADGM or voluntary market, such as ACX,” says Givanakis.

Indeed, such an evolution of the carbon trading market seems inevitable. “As we move into a carbon constrained world the voluntary aspect of the market will drop off,” says ACX’s Pazos. “Companies will be forced to offset in order to participate in global markets.” Bashir at First Abu Dhabi Bank agrees that a cap-and-trade model will be adopted, both in the UAE and in other countries around the world, “once there is greater clarity and coordination in terms of policy-making”. He adds: “Only by coordinating policy across borders will it be possible for individual countries to achieve net zero effectively.”



7,823

Number of registered projects in the UN’s CDM registry



CASE STUDY

ACX HOW WILL IT WORK?

Although the details of ACX’s launch in UAE have yet to be announced, ACX is already operational in Singapore, with 150 active members from across 31 countries. ACX was established in 2019 with trading beginning in 2021. It is currently also partnering to develop carbon exchanges in Kenya and Brazil.

According to ACX, the trading process is very simple. Buyers place USD into their ACX account while sellers place carbon credits into their account. Both buyers and sellers can place an order on the exchange: once the order is matched, the trade is confirmed and settled in real time (T+0). Buyers’ and sellers’ balances are immediately updated to reflect the settlement of the trade.

While the exchange operates with a traditional trading architecture, distributed ledger technology (DLT) is used to securitize carbon credits into ACX tokens (a digital receipt/representation of an issued carbon credit). The use of digital tokens ensures a clear line of ownership between the carbon credit and the digital receipt. The use of DLT simplifies and automates the manual processes that are usually required for OTC carbon trading. In particular, the use of smart contracts makes it easy for users to trade and settle with a clear and immutable record. As on traditional commodity exchanges, owners of tokens can request physical delivery of the underlying carbon credits.

Currently, many carbon markets are organised around projects. The UN’s CDM registry alone has 7823 registered projects, each with a distinct methodology, country of origin, date of issuance, and other features which introduce complexity into carbon trading. ACX gets round this by securitizing carbon credits, with each token backed by a one tonne of carbon dioxide (CO2) equivalent (tCO2e) carbon credit that sits in the Exchange’s trust, enabling traders to gain exposure to an asset class rather than individual projects.

“As we move into a carbon constrained world the voluntary aspect of the market will drop off.”

WHAT WILL SUCCESS LOOK LIKE?

While there is significant momentum towards cutting emissions in the UAE, to date, the approach has been top-down: the average person on the street is not focused on sustainability issues. Until recently, this was also the case in most companies. Over the past year, many leading corporates have appointed executives with responsibility for sustainability and some are developing plans to reach net zero. However, no major companies have yet divulged their strategies. Is the launch of ACX too much, too soon?

Bashir concedes that there is a risk in launching early, but says ACX has the potential to gain a first mover advantage in a market that could be extremely significant by 2030 and will have a major impact on the sustainability agenda. “As importantly, the launch will raise awareness and give companies an opportunity to begin discussions on carbon trading and whether, for example, internal carbon pricing should be deployed by companies as part of their strategy,” he says. “Certainly, when companies approach us for advice on reaching net zero, carbon trading and offsets will be part of the conversation. For companies making large investments in hard to abate sectors in the coming years, the carbon market could be a valuable solution until other technological options are available to reduce emissions.”

While Etihad has made no formal commitment to participating in ACX, Alqubaisi says that the company welcomes the plans for ACX and can envisage using it. “We are also working on projects, such as Etihad Forest,

that could ultimately enable us to sell credits.” Givanakis says that the large oil producers in the UAE, for instance, are working to a 2050 target and have therefore set internal targets for carbon emission reductions; ACX could assist them in achieving their sustainability goals.

The exchange will launch into a very different macroeconomic environment from that when it was first envisaged. With inflation accelerating in many countries and the threat of a global recession, some observers believe that sustainability – and especially climate strategies with no immediate economic growth benefits – could be put on the backburner as governments around the world tackle more immediate challenges.

Pazos at AirCarbon accepts that there is the potential for economic uncertainties to stall climate action. “However, we believe that the climate challenge is so obvious that this is highly unlikely,” he says. Indeed, today’s economic weakness – combined with the energy crisis in Europe and elsewhere – could accelerate its development. “We are seeing climate mitigation activities [being used] as a solution to economic malaise; President Biden’s recent climate law being a case in point,” he says.



2050

The net zero carbon emissions target



“For companies making large investments in hard to abate sectors in the coming years, the carbon market could be a valuable solution until other technological options are available to reduce emissions.”



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