

In collaboration with
PwC



Navigating Article 6: Opportunities for the Middle East and North Africa

WHITE PAPER
NOVEMBER 2023



Contents

Foreword	3
Executive summary	4
1 An overview of carbon markets and Article 6	7
1.1 Today's carbon markets	8
1.2 Evolving carbon markets and development of Article 6	10
1.3 How Article 6 markets overlap with other carbon markets	11
1.4 Challenges in implementing Article 6	12
2 Overview of MENA countries' climate commitments	15
2.1 Overview of MENA countries' climate commitments	16
2.2 Developments in Article 6's governance, finance and infrastructure pillars	17
3. Opportunities in implementing Article 6 across MENA	20
3.1 Potential for the MENA region as a supplier of high-quality carbon credits	21
3.2 Opportunities in expanding Article 6 markets across MENA	22
3.3 Barriers to scaling up Article 6 markets across MENA	24
4. Recommendations to expand Article 6 across MENA	26
Conclusion	30
Contributors	31
Endnotes	32

Disclaimer

This document is published by the World Economic Forum as a contribution to a project, insight area or interaction. The findings, interpretations and conclusions expressed herein are a result of a collaborative process facilitated and endorsed by the World Economic Forum but whose results do not necessarily represent the views of the World Economic Forum, nor the entirety of its Members, Partners or other stakeholders.

© 2023 World Economic Forum. All rights reserved. No part of this publication may be reproduced or transmitted in any form or by any means, including photocopying and recording, or by any information storage and retrieval system.

Foreword



Pedro Gomez
Head, Climate; Member of
the Executive Committee
World Economic Forum



Ian Milborrow
Sustainability, Partner
PwC United Kingdom

With the Middle East and North Africa (MENA) region hosting back-to-back United Nations climate conferences (COP27 and COP28), energy transition and decarbonization are rapidly coming to the fore in the regional discourse. In recent years, many MENA governments have introduced aggressive emissions reduction targets, leading major companies to announce their net-zero programmes.

However, compared to similar economies, MENA companies are lagging behind in their sustainability ambitions. Only 12% of companies in the region have committed to net-zero emissions targets and even fewer (7%) have specified how they will achieve these targets.

Against this backdrop, it is imperative to accelerate collaboration between the public and private sectors and promote the implementation of a regional carbon market to support a pragmatic and cost-effective transition to a low-carbon economy.

Despite significant efforts and major initiatives, carbon markets in the region are still in their infancy and progress towards their development is variable. But greater collaboration and integration can benefit carbon reduction plans across the MENA region. For carbon markets to meaningfully contribute to emissions reduction targets, much more must be done to build regional capacity and establish a transparent and credible market

framework to attract private sector participation and financing.

Article 6 of the Paris Agreement provides a framework for an international carbon market that MENA regional markets can integrate. With thoughtful design of the operational arrangements, it offers countries and companies the necessary flexibility to achieve their net-zero strategies and realize their decarbonization pathways.

It is within this context that the World Economic Forum, through the [Carbon Market Innovation Initiative](#), in collaboration with PwC, is engaging relevant stakeholders in the carbon market ecosystem to support capacity building around the operationalization of Article 6.

Looking ahead to COP28, we seek to promote insightful discussions around how the Article 6 ecosystem needs to evolve to be successful. A particular priority of the initiative is a geographic focus on the MENA region, which faces strong challenges in its decarbonization efforts, yet has been somewhat under-represented in early Article 6 engagement activities.

This report will serve as a reference for public and private entities in the MENA region to understand what needs to be done in the near term to promote meaningful participation in the Article 6 mechanism.

Executive summary

Carbon markets harness the power of trade to channel cost-effective capital into carbon reduction projects, contributing to private and public sector net-zero goals. However, today's carbon markets – whether voluntary, compliance or international – are fragmented and lack both shared standards and trust in carbon credit quality.

The Paris Agreement's Article 6 provides an international framework to integrate the latest standards for recognizing eligible carbon credits, creating a shared infrastructure to track transactions and avoid double counting, and implementing governance processes endorsed by national governments and the United Nations. These measures will increase trust, improve market interaction and encourage large-scale investment in carbon reductions.

Article 6 introduces two key market mechanisms:

- **Article 6.2:** Enables countries to trade carbon credits (known as Internationally Transferred Mitigation Outcomes or ITMOs) to meet their carbon reduction goals.

- **Article 6.4:** Enables countries, companies and other entities to trade carbon credits (known as Article 6.4 Emission Reductions or A6.4ERs).

Challenges in implementing Article 6 include:

- **Double counting:** Without a central mechanism for registering and approving carbon reduction projects, carbon markets run the risk of multiple parties claiming a given credit.
- **Avoided emissions:** The question of whether emissions avoidance efforts can be used to generate Article 6.4 certificates needs clarification.
- **Carbon credit trading registry:** Progress on this is essential to maintain momentum and give potential market participants clear information about how the market will work.

Status of carbon markets in MENA region

The Middle East holds half the world's oil reserves and 40% of its natural gas. Its per capita annual emissions are among the highest of any region in the world (13 tCO₂e), trailing North America (19 tCO₂e) and above Europe (7.8 tCO₂e). Only half of MENA's 16 nations have committed to net zero. As the region hosts COP28 in December, it has an opportunity to use Article 6 to accelerate carbon abatement.

Article 6 mechanisms will open opportunities for countries in the region to comply with their NDCs. Three pillars must be in place to operationalize Article 6:

- **Governance:** Addresses institutional requirements and roles needed to create credible processes to enable trading of carbon reduction credits.
- **Financing:** Refers to resources needed to finance carbon reduction projects and the alternatives to do so under Article 6 schemes.
- **Infrastructure:** Establishes tools to support the ongoing trade in and funding of carbon reduction projects.

Opportunities in implementing Article 6 across MENA

MENA's leadership in energy markets and access to vast renewable resources (the region receives 22-26% of all global solar energy) position it as a major potential supplier of carbon credits. MENA has doubled renewable energy capacity in the last decade. If emissions reduction targets are exceeded and renewable projects are eligible, MENA could generate carbon credits for the Article 6 market.

Breakthrough technologies:

- Green hydrogen, created with renewable energy, can replace fossil fuels in hard-to-abate sectors. Saudi Arabia, the UAE, Oman, Egypt and Morocco are actively exploring opportunities.
- Saudi Arabia and the UAE have announced investments in carbon capture, utilization and storage (CCUS) and direct air capture (DAC).
- These breakthrough technologies align with carbon reduction projects that could generate ITMOs and A6.4ERs by avoiding and capturing emissions.

Natural climate solutions (NCS):

- MENA's unique environmental conditions offer opportunities for NCS, such as mangrove forests, reforestation, afforestation and sustainable land management.
- The region's commitment is evident in the Middle East Green Initiative's aim to plant 50 billion trees and Oman's mission to plant 10 million trees.

Interviews with market players from June-July 2023 highlighted opportunities and barriers to scaling up Article 6 markets across MENA.

Opportunities to expand Article 6 markets:

- 63% of respondents acknowledged Article 6's role in stimulating private sector participation in the low-carbon transition – helping close the regional climate finance gap (~\$186 billion).
- 50% said Article 6 could facilitate access to new low-carbon technologies, enabling future collaborations.
- 50% saw Article 6 as a catalyst for progress towards sustainable development goals.

Barriers to scaling up Article 6 markets:

- 94% declared the lack of an enabling national policy environment and uncertainty around participation mechanisms as major challenges.
- 56% reported uncertainty around eligibility of mitigation activities under Article 6 operations and how the private sector could play a pre-eminent role.
- 50% identified insufficient supporting infrastructure, such as a lack of national registries or MRV systems.

Recommendations for countries to expand Article 6 across MENA

Establish a regional Article 6 governance framework with guidelines on how to participate:

- Guidelines must meet requirements of Article 6 while leveraging existing national carbon market infrastructure.
- Learn from existing deal-tracking and transfer systems (e.g. in Morocco, Tunisia, the UAE and Saudi Arabia).
- Guidelines should cover repercussions for non-compliance with standards for quality, integrity and delivery.

Evaluate eligible Article 6 carbon reduction activities that align with NDC compliance:

- MENA countries should examine their NDCs and determine the sectors and activities where emissions reductions or removals are a priority.
- It is then necessary to determine which climate projects in the region are eligible under Article 6.
- During this process the main priority for countries must remain compliance with their NDCs.

Enhance the infrastructure to implement Article 6 operationalization:

- Build digital transaction infrastructure to ensure transparency and confidence in the carbon market.
- Create secure digital registries to define the use of international, regional or national approaches.
- Adopt digital tools for data collection that are interoperable with international systems.

Find synergies between future compliance carbon markets and regional voluntary initiatives:

- Synergies between different carbon markets could unlock opportunities for emissions reduction, attract investment and accelerate progress towards climate goals.
- To ensure fungibility between markets, develop a clear, unified legal framework with provisions for voluntary and compliance carbon markets.
- Support projects developed in the voluntary carbon market that can transition into compliance carbon markets or qualify for Article 6.

Strengthen public-private interactions to provide clear market signals and promote private sector participation:

- By improving public-private communication, companies can better understand the status, needs and opportunities of carbon markets,

sparkling interest for developers and attracting foreign investment.

- Countries can work with international organizations to create public-private partnerships to mitigate risk and generate financial rewards from project development in an Article 6 context.

Approach to align Article 6 initiatives with MENA stakeholders' interests:

- MENA governments, organizations and private entities have the opportunity to engage with multiple initiatives working to operationalize Article 6 across the region.
- These include initiatives led by the [World Economic Forum's Carbon Market Innovation Initiative](#), [Africa Carbon Markets Initiative \(ACMI\)](#), [MENA Voluntary Carbon Market \(VCM\)](#), [Global Green Growth Institute DAPA Program \(Morocco\)](#), [Global Carbon Council \(GCC\)](#), and two UN initiatives: [Carbon Payment for Development \(CP4D\)](#) and the [Regional Collaboration Centre \(RCC\) for MENA and South Asia](#).

Article 6 can be a turning point in the world's progress towards net zero. It provides a framework for creating robust, trusted carbon markets that can attract the investment required to decarbonize the global economy at scale and speed. It is time to double-down on efforts to make Article 6 trading a reality in MENA and unblock financial flows that could transform the region and its approach to climate risk.

1

An overview of carbon markets and Article 6

Carbon markets provide a pragmatic and cost-effective approach to decarbonization.

↓ Image credit:
Nikada



Carbon markets harness the power of trade to enable market participants to identify and accelerate progress towards net-zero goals by channelling capital into carbon reduction projects. However, today's carbon markets face challenges such as fragmentation, a lack of shared standards and a lack of trust in carbon credit quality. This reduces market participation and limits carbon markets' ability to support decarbonization at scale. To resolve these issues, a framework is needed in which carbon credits are well defined and traceable, with universal rules and standards to improve market interaction and encourage large-scale investment in carbon reductions.

The Paris Agreement's Article 6 provides such a framework for creating an internationally endorsed carbon market. An Article 6 market would achieve the following:

- Integrate the most recent standards for recognizing eligible carbon credits leading to a standard asset class.
- Create a shared infrastructure to track transactions and avoid double counting, thereby increasing credibility.
- Implement governance processes endorsed by national governments and United Nations' approval processes, further increasing trust.

1.1 Today's carbon markets

Carbon markets can be divided into three types: voluntary, compliance and international (see Figure 1). Each market provides opportunities for buyers to buy and project developers to sell carbon credits.

- **Voluntary carbon market (VCM):** A VCM purchaser looks to meet their voluntary carbon reduction commitment through a business-to-business transaction with a project developer, broker or exchange for the rights to claim an emission project's carbon reduction outcomes (i.e. offsets/carbon credits).
- **Compliance carbon market:** A regulated entity under a compliance market seeks to meet regulatory standards or target compliance obligations and uses either emission allowances (pollution permits sold or provided by the regulator) or offset credits resulting from eligible carbon reduction projects.
- **International carbon market:** A nation under an international or sovereign market, for example Article 6, funds carbon reduction project(s) in a host nation in return for the rights to claim the carbon reduction outcomes in the host nation against its Nationally Determined Contributions (NDC) under the Paris Agreement – see Box 1.

Each market provides ways for businesses to participate as both buyers and suppliers of carbon credits; and each market structure exists to draw capital towards climate mitigation action. In the voluntary market, there is a private interest in taking action to offset emissions and receiving recognition for that action (e.g. achieving net zero). In a compliance market, jurisdictional authorities use carbon markets to increase carbon reduction activities by putting a limit on each regulated entity's carbon allowance, thereby changing economic investment incentives. An international market is a compliance market that applies to entire nations. It uses quantitative emission volume restrictions and pricing to create an emissions market. However,

its market boundary is global, providing increased reduction opportunities, allowing for greater and more efficient reductions while also potentially supporting a just transition — since carbon reduction projects often exist in less-developed nations that need capital to pursue those projects.

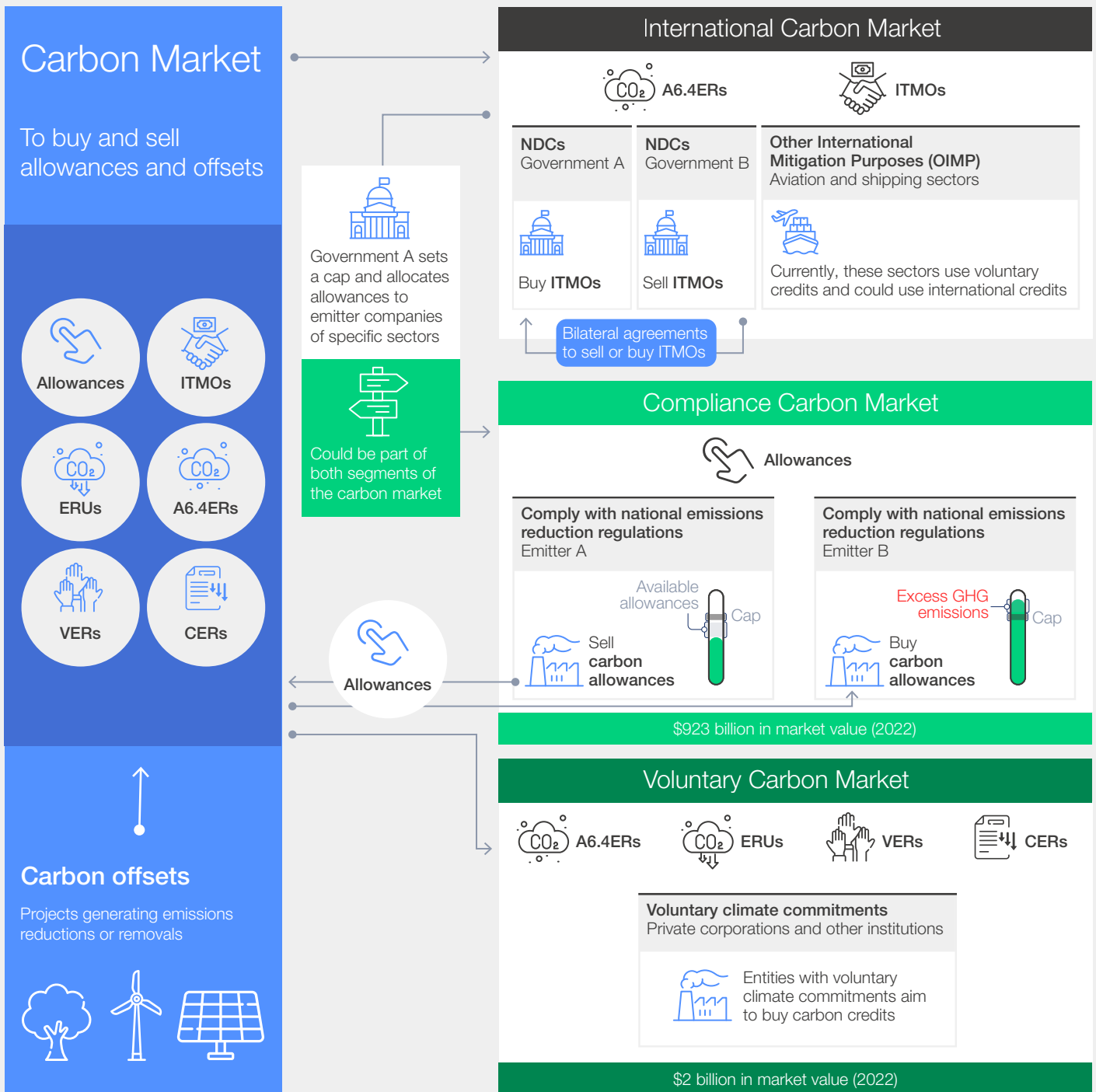
Underpinning each of these markets is the principle that a unit of carbon can be traded between counterparties. Typically, a unit of carbon represents one tonne of carbon dioxide-equivalent (CO₂e) per credit. In each market, participants require credit to cover their compliance obligation or voluntary commitment. Credits are based on the quantity of greenhouse gas (GHG) emissions reduced or eliminated by a carbon reduction project. When a credit is used it is said to be retired or surrendered against a GHG emission to negate the effect of that emission. Carbon credits are tracked on a registry so they can only be used once and not double counted.

Some compliance markets have started to allow a degree of flexibility to incorporate international carbon credits. For example, Singapore will allow companies to use international carbon credits to offset up to 5% of their taxable emissions from 2024.¹ But today, carbon markets are mostly fragmented and there are limited inter-market transactions. For instance, a regulated entity in the EU Emissions Trading Scheme (ETS) cannot use carbon offsets or credits from the VCM to meet its compliance obligation – VCM credits are not fungible under the EU ETS.

Article 6 seeks to resolve this issue by establishing a common definition of a carbon credit and standard, centralized infrastructure and governance to enable trading. This fungibility of credits will provide regulated entities (countries or companies) with flexibility to meet their targets more rapidly and often at a lower overall cost. Fungibility also supports liquidity of carbon markets, resulting in better and more efficient price discovery, in turn increasing investment incentives that should decrease the current decarbonization funding gap.

“ Fungibility of credits under Article 6 will provide regulated entities (countries or companies) with flexibility to meet their targets more rapidly and often at a lower overall cost.

FIGURE 1 | Understanding today's diverse carbon markets



1.2 Evolving carbon markets and development of Article 6

Through Article 6, the Paris Agreement introduces market mechanisms (Articles 6.2 and 6.4) to authorize the generation, transfer or trading of carbon credits which represent GHG emissions avoidance or removal project outcomes.² Meanwhile, Article 6.8 is a non-market mechanism which allows for international cooperation between parties with no expectation that credits are traded or transferred.³

Global carbon markets under Article 6 can link currently fragmented markets and nations, enabling them to undertake cooperative carbon reduction projects, as well as helping businesses and private capital to move more quickly and efficiently to work towards net zero. The relevant types of market mechanisms under Article 6 are summarized below.⁴

Decarbonizing the global economy at sufficient scale and speed will require trillions of dollars of capital. Achieving this level of investment will require greater participation from both governments and the private sector. Article 6 can help accelerate carbon market participation in two ways:

- **Article 6.2** enables country-to-country trade of carbon credits through bilateral or multilateral agreements, where an emissions reduction project host nation can transfer credits from the project to a funding nation that can use those credits to meet its NDC.
- **Article 6.4** enables a centralized carbon market where various organizations – nations, private sector and other entities – can register credits from emissions reduction projects to be bought and sold.

Article 6 could be a turning point in the world's progress towards net zero, if successfully implemented. To properly understand the potential impact of Article 6 and its role in furthering global efforts towards achieving net-zero emissions, it is critical to delve deeper into the specific mechanisms of Article 6.2 and 6.4. This understanding is essential to appreciate how Article 6 can drive accelerated participation from key stakeholders and pave the way for transformative change.

“ Article 6 could be a turning point in the world's progress towards net zero, if successfully implemented.

BOX 1 Nationally Determined Contribution (NDC)⁵

An NDC or Nationally Determined Contribution is a climate action plan to cut emissions and adapt to climate impacts. Each Party to the Paris Agreement is legally required to establish an NDC and update it every five years. But given the large gap between the emissions cuts required to limit global warming to 1.5°C and the emissions reductions currently planned, the Glasgow Climate Pact in

November 2021 called on all countries to revisit and strengthen the targets in their NDCs in 2022. Each new round of updates is expected to ratchet up ambition through steeper emissions cuts and more expansive adaptation measures. So far, all 193 Parties to the Paris Agreement have issued at least a first NDC; by September 2022, 139 Parties had communicated a new or updated NDC.

Article 6.2: Trading between sovereign states

Article 6.2 only encompasses bilateral or multilateral trade between sovereign states. It has the following features:

- Carbon reductions/credits under Article 6.2 are traded as Internationally Transferred Mitigation Outcomes (ITMOs) through a voluntary cooperative approach.
- Each ITMO allows one country (host) to transfer avoided or removed GHG emission reductions from a host country project to the buyer country so that the buyer can use those ITMOs towards achieving its Nationally Determined Contribution (NDC).

- A “corresponding adjustment” (CA) is required between the transacting countries where emissions associated with the ITMO volume are added to the host country's NDC ledger and deducted from the buying country's NDC ledger.
- Agreements are bilateral or multilateral where often the transaction is market-based with the buyer using an offtake agreement based on a price per tonne of CO₂e.

At COP27 in November 2022, Ghana and Switzerland announced the first bilaterally authorized project to be implemented under Article 6.2.⁶ So far around 136 ITMO-based pilot projects have been conducted globally to support readiness activities such as awareness raising, capacity building and mitigation planning.⁷

Article 6.4: International trading between various parties

Article 6.4 encompasses international trading between countries, companies and other entities. It has a centralized market mechanism with the following features:

- Framework for parties to receive emissions reduction benefits through funding carbon emissions avoidance or removal projects outside their domestic territories.
- The reduction outcome/credits are registered as Article 6.4 Emission Reductions (A6.4ERs).
- The market includes a central registry for all A6.4ERs.

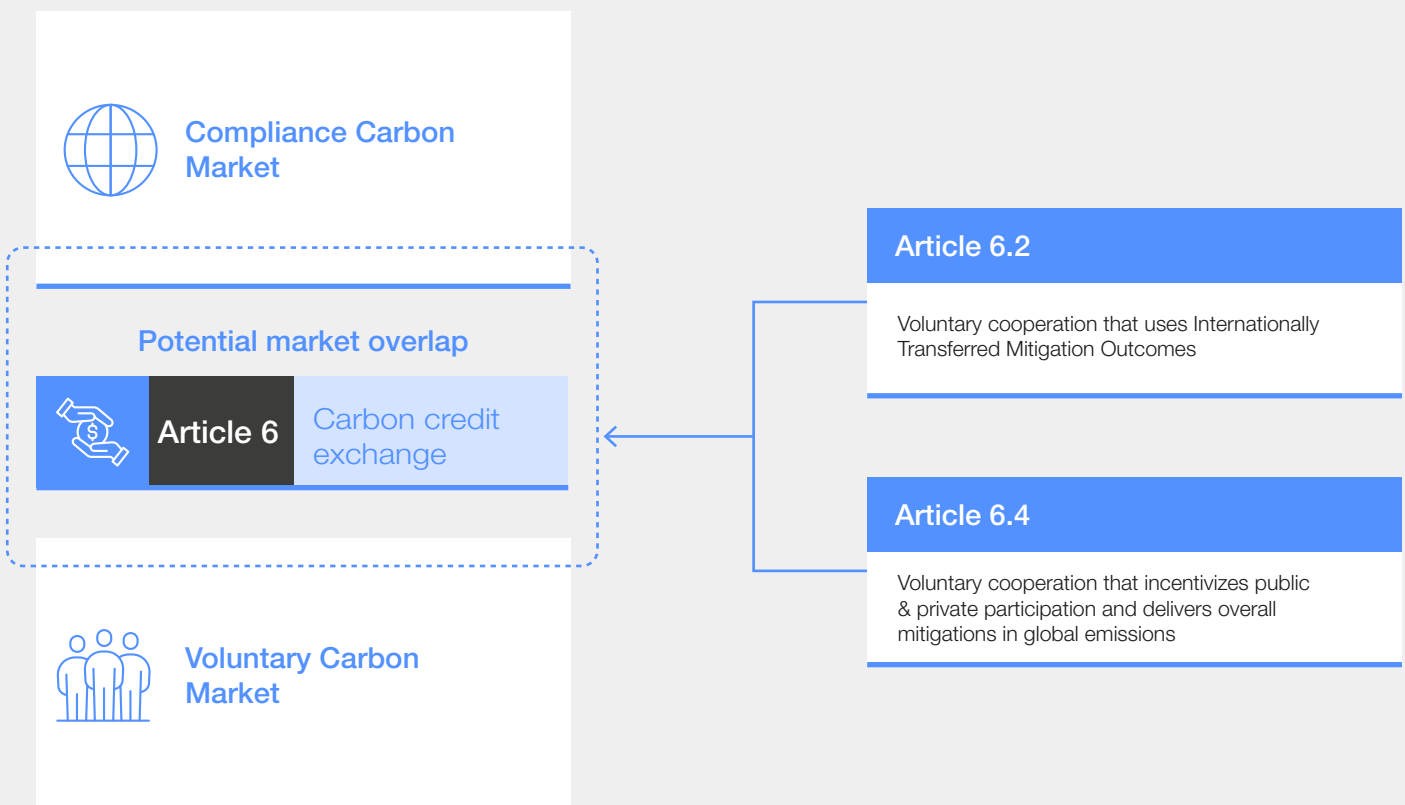
- A6.4ERs can be designated by the host country's Declared National Authority (DNA) as either usable against NDCs (like an ITMO) or not usable.
- Trading, infrastructure and governance will be supervised by the UN's Article 6 Supervisory Body (SB), but projects also need to be approved by each participating DNA.
- An Article 6 registry and mechanism will replace the Clean Development Mechanism (CDM) through a transition standard and procedure set to come into force on 1 January 2024.⁸
- Emissions reduction project eligibility, infrastructure (i.e. registry) and governance are currently being finalized by the SB and the market is expected to go live in 2024.

1.3 How Article 6 markets overlap with other carbon markets

Article 6 markets may interact with and influence existing compliance and voluntary carbon markets. These effects need to be managed and need to be confirmed by each country's DNA. Figure 2 shows the potential overlap of Article 6 markets with compliance and voluntary

markets. For example, governments may extend their obligations under NDCs to local operators through regulation and carbon pricing instruments. Meanwhile, private entities with voluntary climate commitments could see Article 6.4 as an alternative to the current VCM.

FIGURE 2 How Article 6 overlaps with and influences other carbon markets



The Article 6 rulebook provides a framework for the integration of Article 6 credits into Emissions Trading Schemes (ETS) and other carbon market mechanisms. This can bring a diverse set of benefits such as:

- Reducing overall abatement costs (international credits can reduce the costs of meeting compliance requirements).
- Increased market liquidity (as linking to regulated markets creates government regulated demand and higher pricing).
- Consistent definition of the carbon credit commodity.
- Promotion of financing for GHG reduction projects (reducing risk for long-term investors).⁹
- Enhancing benefits to the UN's Sustainable Development Goals (SDGs) and supporting just transition outcomes.

If Article 6 credits are linked to national compliance markets, the companies covered by these carbon pricing schemes can stimulate significant demand in the Article 6 markets. This trading within other compliance mechanisms, known as credit fungibility, gives regulated parties (countries or companies) flexibility to meet their carbon targets, often at a lower overall cost. This provides those parties a wider range of options for managing their strategic and financial carbon positions.

However, linking these carbon schemes to Article 6 credits needs to be carefully considered to avoid any negative impact on climate efforts and to ensure credibility of activities. Concerns include degradation of environmental integrity, collateral risks and diversion of mitigation efforts. Therefore, if linking to Article 6 is desired, jurisdictions must assess the ramifications, including how to demonstrate additionality and permanence of credits in a linked system.¹⁰

1.4 Challenges in implementing Article 6

The designers of Article 6 sought to create a robust framework, but there are issues that need to be resolved if the promises of Article 6 are to be realized. We summarize three major issues below.

Double counting remains a concern

To have a significant impact on carbon emissions and to ensure reliability, carbon markets need a consistent way of counting and tracking carbon credits. Article 6 includes a transfer requirement where a corresponding adjustment must be made when credits are transferred between nations to account for the transfer of carbon reduction claims (see Figure 3). Without a central mechanism

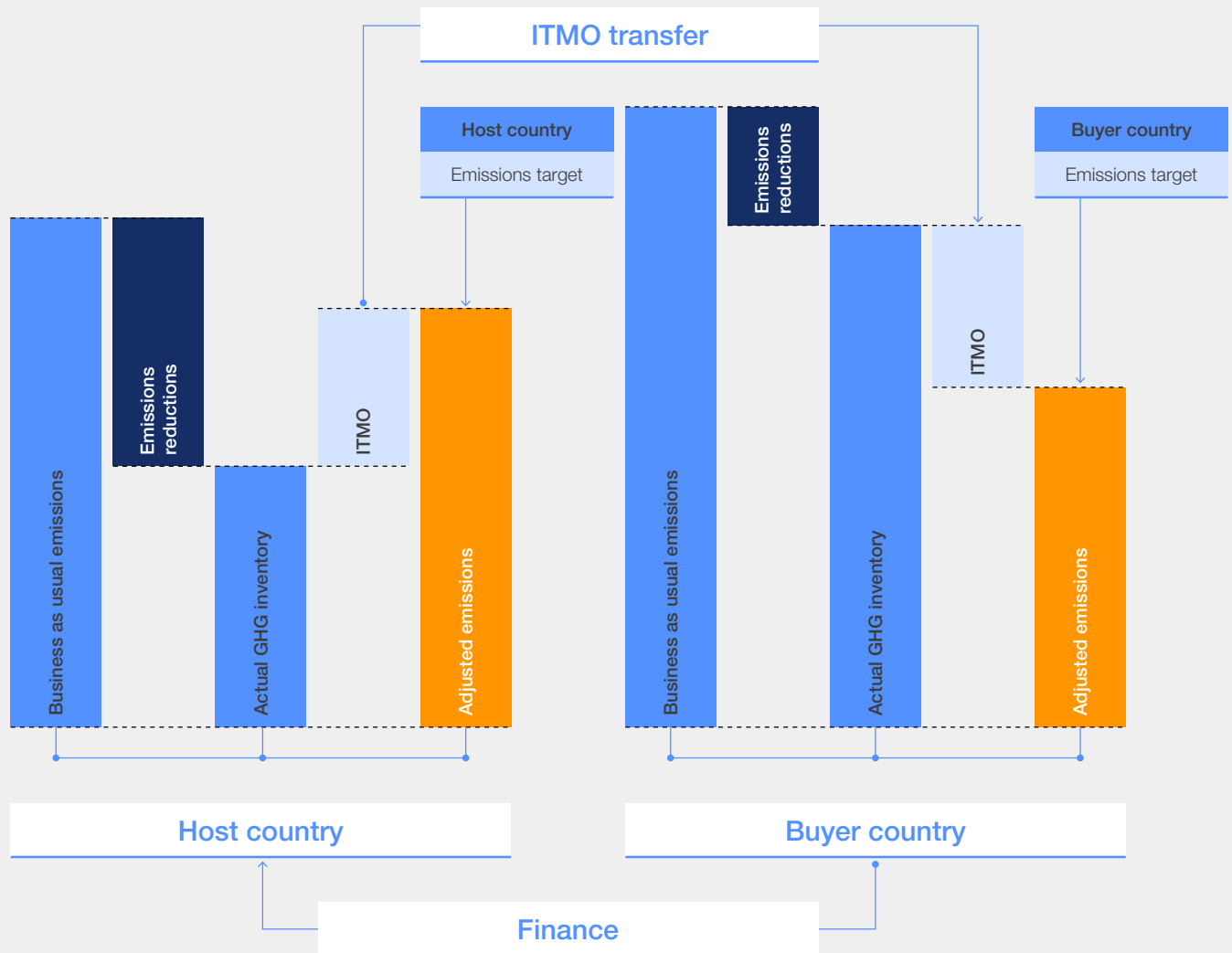
for registering and approving carbon reduction projects, carbon markets run the risk of multiple parties claiming the same emissions reduction.

For example, if party A reforests land and sells the rights to the credits associated with the sequestered emission reductions to party B, then without a registry to track the credit and a requirement for a corresponding adjustment, there is a risk that both parties will count these emission reductions towards their reduction targets. This also applies to Article 6 transfers and NDC impacts. If emission reductions are double-counted, confidence in the market is undermined and actual reductions in global emissions are overestimated, in turn degrading the environmental integrity of the carbon reduction funding activity.

↓ Image credit:
MarioGuti



FIGURE 3 | How a corresponding adjustment works for host and buyer countries¹¹



Note: the corresponding adjustment is reflected in the orange “adjusted emissions” columns.

“ Getting clarity on eligible carbon reduction project types – and thus agreeing a standard definition of a carbon credit asset class – is critical to the feasibility of carbon reduction projects.

Avoided emissions solutions

The question of whether emissions avoidance efforts can be used to generate Article 6.4 certificates is a crucial issue that requires further explanation. Activities involving the reduction or removal of GHG emissions are expressly included in the scope of the mechanism under Article 6 agreed at COP26. However, the decision on the addition of a third category of activities – emissions avoidance – has been left open and no significant progress has been made on this issue.

The exact meaning of the term “avoidance” is unclear, as there is no official definition from the UN Framework Convention on Climate Change (UNFCCC) and the terms “avoidance” and “reduction” are often used interchangeably in carbon markets. For example, if emissions are reduced by switching from natural gas electricity to renewable electricity, this activity can generate VCM credits and sometimes compliance credits by avoiding future natural gas-related emissions. However, whether these reductions should be eligible for credit trading remains unclear. Getting clarity on eligible carbon reduction project types – and thus agreeing a standard definition of a carbon credit asset class – is critical to the feasibility of carbon reduction projects.

Lack of progress in implementing an international carbon credit registry

Progress has been slow in implementing an Article 6 credit trading registry, although an update is expected at COP28 and the UN Supervisory Body has indicated confidence that 2024 could be the start of market operations. Progress is essential to maintain the momentum of Article 6 markets and to give potential market participants clear information about how the market is working.

In particular, the private sector is waiting to see how the problems associated with the operationalization of Article 6 will be resolved before deciding to participate in this carbon market and to invest funds in carbon reduction projects. Article 6 also has the potential to disrupt the VCM as investors too are waiting for clarity as to whether Article 6 will impact carbon credit ownership claims and whether countries will put Article 6 frameworks in place for approving the transfer of carbon credits between nations.

↓ Image credit:
Wildroze



2

Status of carbon markets in the MENA region

Article 6 mechanisms will open opportunities for countries in the region to comply with their NDCs.

↓ Image credit:
Stefan Tomic



2.1 Overview of MENA countries' climate commitments

The Middle East region holds half the world's oil reserves and 40% of its natural gas.¹² Its per capita annual emissions are among the highest of any region in the world (13 tCO₂e), trailing North America (19 tCO₂e) and above Europe (7.8 tCO₂e).¹³ In December 2023, the region hosts the UN Climate Conference COP28. One critical question to consider is this: How can the region benefit from the Article 6 framework to accelerate its carbon abatement efforts in a more cost-effective way?

This chapter examines the status of the MENA region's carbon market, focusing on current implementation problems around regulatory frameworks, financial demands and infrastructure requirements. Based on these findings, the chapter proposes options to close existing gaps between countries and establish an Article 6-aligned carbon market across the region.

The analysis for this report relates to 16 countries: Algeria, Bahrain, Egypt, Israel, Iraq,

Jordan, Kuwait, Lebanon, Morocco, Oman, Palestine, Qatar, Saudi Arabia, Tunisia, Syrian Arab Republic and the United Arab Emirates (the UAE). While Libya, Yemen and Iran are also analysed, they are not signatories to the Paris Agreement, which is mandatory to trade under Article 6.

While most MENA countries have set specific NDC goals, only eight out of 16 have committed to net zero.¹⁴ To date, the region has focused on using voluntary rather than regulated carbon markets to help with decarbonization efforts. Half the countries are either planning or pursuing government-led initiatives in the VCM. While Israel and Morocco have introduced a carbon tax,¹⁵ this is not directly related to carbon trading since emissions reductions driven by such internal policy instruments are not additional.

Table 1 outlines the status of each country in the region regarding their climate commitments, NDC strategies and involvement in carbon markets.

“ While most MENA countries have set specific NDC goals, only eight out of 16 have committed to net zero.

TABLE 1 Overview of MENA countries' climate commitments and carbon market involvement

Country	Nationally Determined Contributions (NDC)	Net-zero target ¹⁶	Intention to use Article 6 for NDC ¹⁷	Bilateral agreements in place	Designated national authority ¹⁸	Voluntary carbon market involvement
Algeria	7% GHG reduction by 2030	⊗	⊗	⊗	⊗	⊗
Bahrain	30% GHG reduction by 2035	2060 Pledge	⊙	⊗	⊗	Ongoing with govt support
Egypt	Sector goals for GHG reduction by 2030: - Electricity 37% - Oil and gas 65% - Transportation 7%	⊗	⊙	⊗	⊗	Ongoing with govt support
Iraq	Strategies described in different topics but no specific goals	⊗	⊗	⊗	⊗	CDM/VCM project experience
Israel	27% GHG reduction by 2030 and 85% by 2050 Sector goals: - 30% in industry by 2030 and 56% by 2050 - Renewable power generation share of 20% in 2025 and 30% in 2030	2050 in discussion	Under consideration	⊗	⊗	CDM/VCM project experience
Jordan	31% GHG reduction by 2030	⊗	⊙	⊗	⊗	Ongoing with govt support

Kuwait	7.4% GHG reduction by 2035 with unconditional national effort	2060 pledged	✓	⊗	⊗	CDM/VCM project experience
Lebanon	20% GHG reduction (unconditional) by 2030 and 31% (conditional) compared to business-as-usual Targets in renewables for the building sector by 2023: - 18-30% (conditional) of power demand - 11-16.5% (conditional) of heat demand	2050 in policy	Under consideration	⊗	⊗	CDM/VCM project experience
Morocco	18.3% GHG reduction by 2030	⊗	✓	Yes, with Switzerland and Singapore	✓	Ongoing with govt support
Oman	7% GHG reduction by 2030: - 4% on national efforts - 3% needs assistance	2050 in policy	✓	⊗	⊗	Ongoing
Palestinian Territories	12.8-24.4% GHG reduction by 2040 Sector goals: - By 2040, 50% farms will apply climate-smart agriculture	⊗	⊗	⊗	⊗	⊗
Qatar	25% GHG reduction by 2030	⊗	✓	⊗	⊗	Ongoing with govt support
Saudi Arabia	- 278 million tonnes of CO ₂ e to be reduced annually by 2030 - 50% of energy mix from renewables by 2030	2050 in policy	✓	Yes, with Japan	✓	Ongoing with govt support
Tunisia	45% GHG reduction (unconditional and conditional) compared to 2010, by 2030	2050 in policy	✓	Yes, with Japan	⊗	CDM/VCM project experience
Syria	Means of implementation described but no specific goals	⊗	⊗	⊗	⊗	⊗
United Arab Emirates	19% GHG reduction by 2030	2050 in policy	✓	Yes, with Japan	✓	Ongoing with govt support

2.2 | Developments in Article 6's governance, finance and infrastructure pillars

Three pillars must be in place to attract participation in Article 6 and to ensure a solid policy foundation by which it can be operationalized:

- **Governance:** addresses institutional requirements and roles needed to create credible processes to enable the trading of GHG reduction credits.
- **Financing:** refers to the need to draw financial resources to carbon reduction projects under Article 6-aligned national approaches, by

clarifying the definition of carbon credit assets to support funding investment decisions.

- **Infrastructure:** establishes the tools and registry required to support ongoing trading, tracking and retirement of carbon reduction project credits.

Although the implementation of Article 6 in MENA has been slow, various experiences throughout the region demonstrate how some countries are committed to achieve adequate operationalization of governance, financing and infrastructure pillars.

Governance

Bilateral agreements for ITMOs and designated national authorities (DNAs) established for A6.4ERs

Four countries in the region have bilateral agreements for emissions reduction transactions under Article 6.2. Saudi Arabia, Tunisia and the UAE have agreements with Japan under the Joint Crediting Mechanism (JCM), while Morocco has agreements with Singapore and Switzerland.¹⁹

This progress, along with participation of these countries in the Article 6 partnership, will help build regional capacities and accelerate future operationalization of Article 6 throughout the region. Currently, the UAE, Saudi Arabia and Morocco have confirmed their DNAs for the management of the Article 6.4 mechanism, clarifying the interest of these countries in the transaction of both ITMOs and A6.4ERs.

Financing

Direct purchase approaches dominate but multiple carbon market platforms established

Most Article 6 pilots are structured under the direct purchase approach of ITMOs. Out of the 136 global pilots, two were developed by Morocco with the country's organic waste-to-energy programme and the energy efficiency fund. Nevertheless, some new financing opportunities are emerging from the experience of MENA countries with Japan as a bilateral partner.

For example, JCM encourages project financing during the first phase of implementation, with

funding in the form of grants and loans provided by the Government of Japan, its affiliated organizations and the Asian Development Bank (ADB). This can also include funding for JCM feasibility studies for decarbonization technologies and to develop JCM methodologies.²⁰

Nevertheless, financing through the direct purchase of Article 6 credits is likely to continue to be of great interest due to strong demand from different companies to obtain high-quality credits to meet their decarbonization objectives. To facilitate this, it will be important for countries to join efforts with different initiatives such as the Regional Company of the Voluntary Carbon Market (RCVCM). Founded by Saudi Arabia's Public Investment Fund (PIF) and the Saudi Tadawul Group, the initiative seeks to offer direction and resources to assist companies and industries in the MENA region to participate in a robust and effective market for the generation and utilization of voluntary carbon credits.²¹ RCVCM can provide valuable support due to its ability to channel climate finance and its plan to establish a fund to invest in climate projects.²²

There are further initiatives underway signalling the ambition of both public and private actors to mitigate emissions using market mechanisms in the MENA region. For example, AirCarbon Exchange (ACX), First Abu Dhabi Bank, Mubadala Investment Company, Abu Dhabi National Energy Company, Abu Dhabi Future Energy Company and the UAE Independent Climate Change Accelerators (UICCA) have established an alliance to cooperate on issues such as decarbonization, development of standards and frameworks for innovative carbon finance.²³ This alliance could accelerate the implementation of a robust carbon market not only in the UAE but throughout the region. In addition, First Abu Dhabi Bank has established a carbon desk to promote carbon trading across the region (see Box 2).

BOX 2

First Abu Dhabi Bank (FAB)²⁴

First Abu Dhabi Bank (FAB) has established a carbon desk that plays a central role in carbon trading, not only in the UAE, but also in a wider international context. Through this operational approach, FAB enables the trading of physical carbon allowances and credits within the bank's portfolio, extending these services to

its customers. With the introduction of the FAB Carbon Desk, the bank aims to foster the growth of the carbon market ecosystem in the Middle East region and globally. At the same time, it aims to promote the development of transparent carbon markets, enhancing the credibility and efficiency of carbon credits.

Infrastructure

Progress underway with increasing interest in moving forward

For the MENA region to develop a robust carbon market and improve flows of climate finance, it needs to develop a more robust market infrastructure and provide more transparency on the use of carbon credits.

There is some progress on this front. For example, Jordan has worked with the World Bank's partnership for market implementation (PMI) to create a measurement, reporting and verification (MRV) system and a GHG registry that comply with international standards. These systems support the nation's NDC by monitoring emissions in industries

like energy, transportation and agriculture.²⁵ Jordan made its MRV software available as open source to other countries to help develop the infrastructure needed to operationalize Article 6, in turn promoting the transparency of carbon trading in the region.

Similarly, the UAE's Ministry of Climate Change and Environment launched the National Dialogue for Climate Ambition (NDCA) to define and raise sectoral climate ambitions and advance the UAE Net Zero by 2050 strategic initiative to meet its NDC. In addition, the ministry has signed a preliminary agreement with the UAE-based Industrial Innovation Group (IIG) and Venom Foundation to establish a national system for carbon credits using blockchain technology. This agreement aims to create a system to promote transparency and reliability across the entire carbon asset development process.²⁶

↓ Image credit:
kasezo



3

Opportunities in implementing Article 6 across MENA

MENA's leadership in energy markets and access to renewable resources position it as a major potential supplier of carbon credits.

↓ Image credit:
grandriver



3.1 Potential for the MENA region as a supplier of high-quality carbon credits

Given its position as a global leader in energy markets, the MENA region has the potential to emerge as a prominent supplier of high-quality carbon offsets, as well as to maximize opportunities to fund strategic carbon reduction projects that can reduce both the global and local costs of meeting NDCs. The incorporation of carbon credit value streams can assist MENA in harnessing its renewable and nature-based resources, by accelerating progress in the climate-critical technologies outlined below.²⁷

solar energy that hits the planet and has the capacity to supply at least 50% of global electricity consumption.²⁸ Furthermore, the Gulf of Suez in Egypt, Morocco's Atlantic coast, Saudi Arabia's north-western desert and Oman's southern region are all potential areas for wind power projects.²⁹

MENA has doubled its renewable energy capacity in the last decade.³⁰ Saudi Arabia, the UAE, Israel, Oman, Morocco and Egypt are leading the green energy transition in the region and they are estimated to account for 85% of increases in renewable capacity by 2027.³¹ Egypt's Commercial International Bank is helping increase the share of renewables in the country's energy mix through issuing a \$100 million "Green Bond" (see Box 3).

Additionally, if emissions reduction targets are exceeded and renewable projects are eligible, MENA region could generate carbon credits for the Article 6 market.

“ MENA region receives 22-26% of all solar energy that hits the planet and has the capacity to supply at least 50% of global electricity consumption.

Leverage large-scale renewable energy projects

MENA region's vast solar and wind resources make it an ideal location for large-scale renewable energy projects with the potential to significantly reduce carbon emissions associated with power generation. The region receives 22-26% of all

BOX 3

Commercial International Bank Egypt (CIB)³²

CIB has demonstrated the potential role of banks as a viable stakeholder in the carbon market ecosystem. Through the successful issuance of the Green Bond, CIB has paved the way for the private sector's transition to a low-carbon economy by providing products and services that contribute to mitigation and decarbonization, including renewable energy, industrial energy efficiency, green buildings and resource efficiency.

To help drive the real economy transition, in 2021 CIB launched the "Sustaining Sectors"

programme, a sectoral and multi-stakeholder platform that involves broad participation from key players in the national decarbonization journey. The platform has set up an ecosystem of certified professionals, energy audits and awareness-raising programmes. The programme enables Bank executives, current and potential clients, policy-makers, academics and technology service-providers to participate in an interactive discourse and collaboration that ensures market readiness for carbon trading and effective implementation of Article 6 in Egypt.

Invest in breakthrough technologies

Innovative technologies, such as green hydrogen and carbon capture technologies, are showing potential to help decarbonize heavy industrial sectors of the global economy.

Green hydrogen, created with renewable energy, can replace fossil fuels in hard-to-abate sectors like transportation and steel production. Saudi Arabia, the UAE, Oman, Egypt and Morocco are actively exploring green hydrogen opportunities, signing memoranda of understanding for strategic partnerships and carrying out feasibility studies.³³

Saudi Arabia and the UAE have announced investments in carbon reduction technology, particularly in carbon capture, utilization and storage (CCUS) and direct air capture (DAC).³⁴ CCUS captures industrial emissions at source, while DAC extracts CO₂ from the atmosphere for it to be subsequently stored underground. Currently in the prototype phase, DAC is costly (\$600–\$1,000/tCO₂), but with regulations and market development, future costs could drop to \$125–\$335/tCO₂ for a large-scale plant built today, according to the International Energy Agency.³⁵

All operational DAC plants are located in Europe and North America. However, there are regional assessments into DAC underway by the Abu Dhabi National Oil Company (ADNOC) as part of UAE's

“ It is important that any investments in green hydrogen or CCS should not displace urgent efforts to phase out fossil fuels as rapidly as the science requires.

decarbonization goals and ADNOC’s 2045 Net Zero ambition.³⁶ ADNOC and Occidental have announced they are actively assessing potential investment opportunities in the UAE and the US in both carbon capture and storage and DAC. Building up large portfolios like these could transform the region into a major promoter of climate-compatible and efficient technologies.

These breakthrough technologies align with carbon reduction projects that could generate ITMOs and A6.4ERs by avoiding and capturing emissions. Global multi-stakeholder platforms such as CCS+ (“carbon capture and storage in its various forms”) and Hydrogen to Net Zero (H₂NZ) aim to leverage carbon markets to accelerate the adoption of breakthrough technologies. The CCS+ initiative builds a robust accounting framework to bolster environmental integrity for advancing innovative climate technologies.³⁷ Likewise, the H₂NZ initiative works towards establishing and validating methodologies for low-carbon hydrogen projects in line with standards set by Verra and Gold Standard.

These quantification approaches may then transition to Article 6 markets upon the establishment of global procedures for adopting eligible projects to generate ITMOs or A6.4ERs.³⁸ As a result, countries could attract investments by including these high-cost operations in authorization statements for Article 6 trading, making them government-backed projects that de-risk green technologies while monetizing the carbon market.

These investments should complement broader efforts to decarbonize the economy under NDC commitments. It is important that any investments in green hydrogen or CCS should not displace urgent

efforts to phase out fossil fuels as rapidly as the science requires. While all carbon avoidance and carbon removal technologies are necessary and urgently needed, governments and investors should prioritize funding carbon avoidance measures, which offer immediate pollution reduction while establishing the mainstream technology of the future.

Cultivate natural climate solutions

MENA’s unique environmental conditions offer opportunities for nature-based carbon sequestration, such as mangrove forests acting as carbon sinks. Reforestation, afforestation and sustainable land management practices can also contribute to carbon reduction, while enhancing biodiversity and ecosystem services. The region’s commitment to natural climate solutions (NCS) is evident in, for example, the Middle East Green Initiative’s aim to plant 50 billion trees across the Middle East, ADNOC’s tree planting on Zirku Island and Oman’s mission to plant 10 million trees.⁴⁰

Furthermore, the region’s extensive coastal areas along the shores of the Mediterranean Sea, Red Sea, Gulf and Atlantic Ocean could attract investment in coastal ecosystems, such as mangroves, which can store three to five times more carbon than terrestrial forests.⁴¹

By simultaneously pursuing these technology pathways and projects, MENA can emerge as a key player in the global carbon offset market, offering high-quality offsets generated through a diverse range of initiatives that align with international climate goals.

3.2 Opportunities in expanding Article 6 markets across MENA

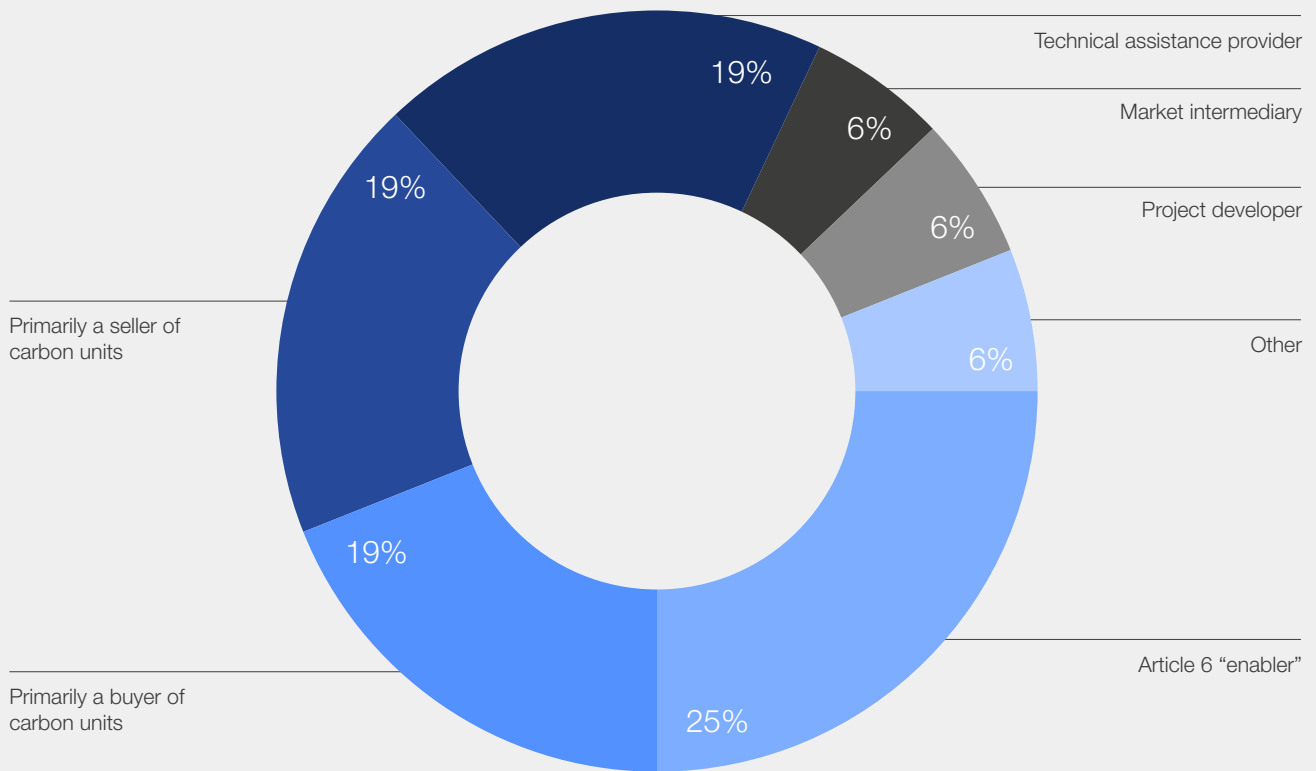
To identify regional Article 6 implementation opportunities, challenges and specific market players’ needs, the Forum conducted a survey from June–July 2023 with 16 responses from subject-matter experts, augmented with one-on-one interviews with relevant stakeholders and contrasted the results with secondary data.

The survey results also provided recommendations – detailed in the next chapter – on how to promote

Article 6 supply and demand and how MENA countries could leverage Article 6 to achieve climate and sustainable development goals.

Figure 4 shows survey participants’ roles in the Article 6 ecosystem. These range from an active role as buyers, sellers or developers of Article 6 credits to a supportive role facilitating ecosystem development as enablers, market intermediaries or providing technical assistance.

FIGURE 4 | Role of survey participants in Article 6 ecosystem



“ Stronger private sector participation could have a considerable impact on closing the regional climate finance gap, estimated at \$186 billion to comply with NDCs.

Promoting private sector participation in low-carbon transition

As a new and evolved carbon credit transaction environment, Article 6 opens the door for further private sector engagement. A substantial proportion (63%) of respondents acknowledged Article 6’s role in stimulating private sector participation in the transition to a low-carbon economy, aligning with the region’s wider decarbonization goals.

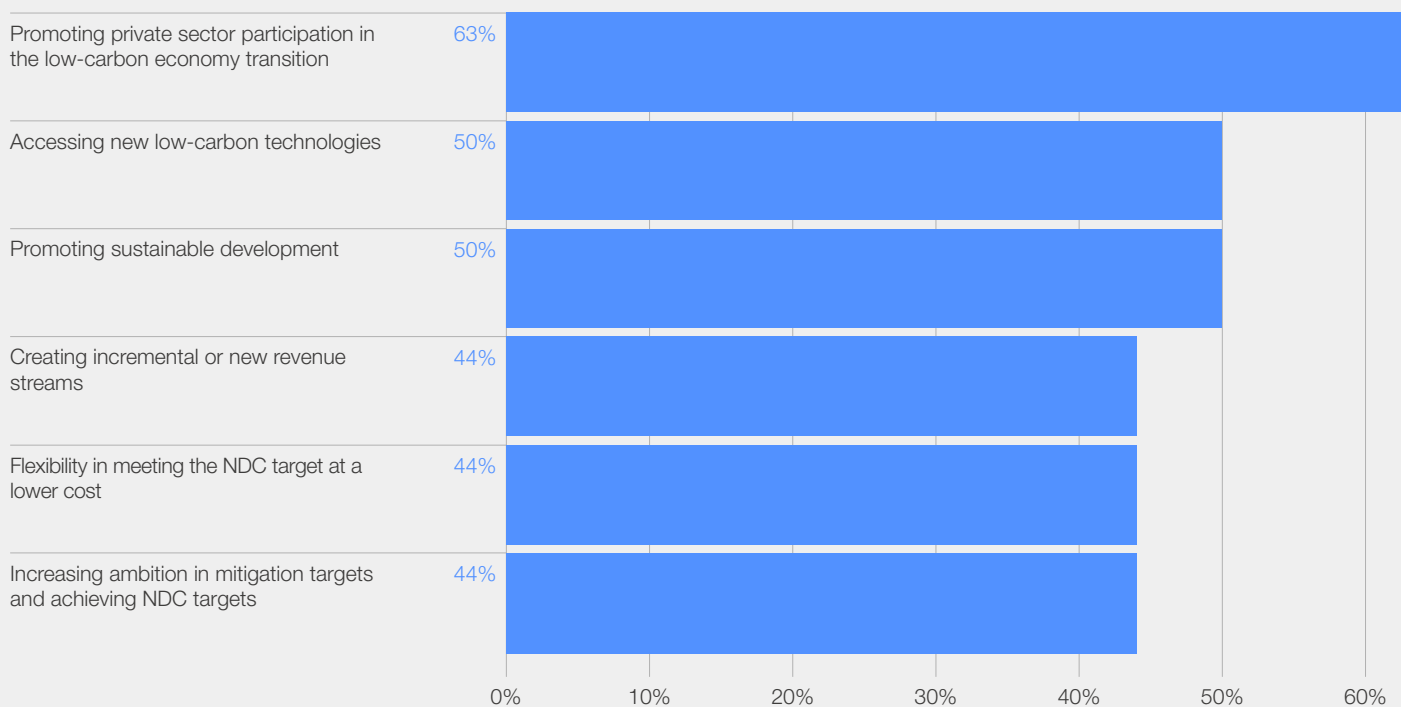
Currently, MENA receives the smallest amount of climate finance of any region in the world – an estimated \$16 billion a year.⁴³ However, stronger private sector participation could have a considerable impact on closing the regional climate finance gap, estimated at \$186 billion to comply with NDCs.⁴⁴

Accessing new low-carbon technologies and promoting sustainable development

In addition to promoting private sector participation, half of respondents said that Article 6 could facilitate access to innovative low-carbon technologies, paving the way for new types of collaboration between countries and entities to achieve further mitigation in the future. Expanding the Article 6 market could also strengthen national institutional capacity and lead to more technology options becoming available in host countries.⁴⁵

The same proportion of respondents saw Article 6 as a catalyst for promoting sustainable development. Guidance around Article 6 implementation includes how governments should incorporate the achievement of sustainable development objectives into the Article 6 national framework. By properly designing and implementing activities, governments can deliver mutually beneficial impacts for buyers and sellers that contribute to their sustainable development goals.

FIGURE 5 | Opportunities in expanding Article 6 markets across MENA¹¹



3.3 Barriers to scaling up Article 6 markets across the MENA region

Lack of enabling policy environment at country level

As shown in Figure 6, the great majority (94%) of respondents declared the lack of Article 6 policy development at country level and uncertainty regarding participation mechanisms as the major current challenges to implementing Article 6 in the region. This is likely to be the result of knowledge and capacity gaps, limited regional participation with Article 6.2 (only four out of 16 countries in the region have Article 6.2 agreements) and the fact that the Article 6.4 mechanism is not yet operational.

While only three MENA nations have established a governmental body in charge of Article 6 approvals, the completion of the Article 6.4 guidance should enable a much more rapid pursuit of projects, transactions and development of policy and infrastructure in support of Article 6 at the national level.⁴⁶

As long as host countries maintain the technical rigour that leads to high-quality credits, create infrastructure that enables mutually beneficial

transactions and ensure transparency through the tracking of carbon reduction projects, then the relatively slow process of Article 6 adoptions in the region can be accelerated. This in turn will provide mutual benefit for both buying and selling parties as well as enabling more rapid progress towards global climate mitigation.

Uncertainty around which activities are eligible within Article 6

A majority (56%) of respondents reported that there is uncertainty around the mitigation activities that would be eligible under Article 6 operations and how the private sector could play a preeminent role in the ecosystem. The rulebook of the UNFCCC has opened the possibility for negotiating parties to define eligible activities, as these can be context- and location-specific. However, this can also prove challenging since countries must decide which activities are suitable for international carbon credit trading without compromising their own ability to achieve their NDCs.

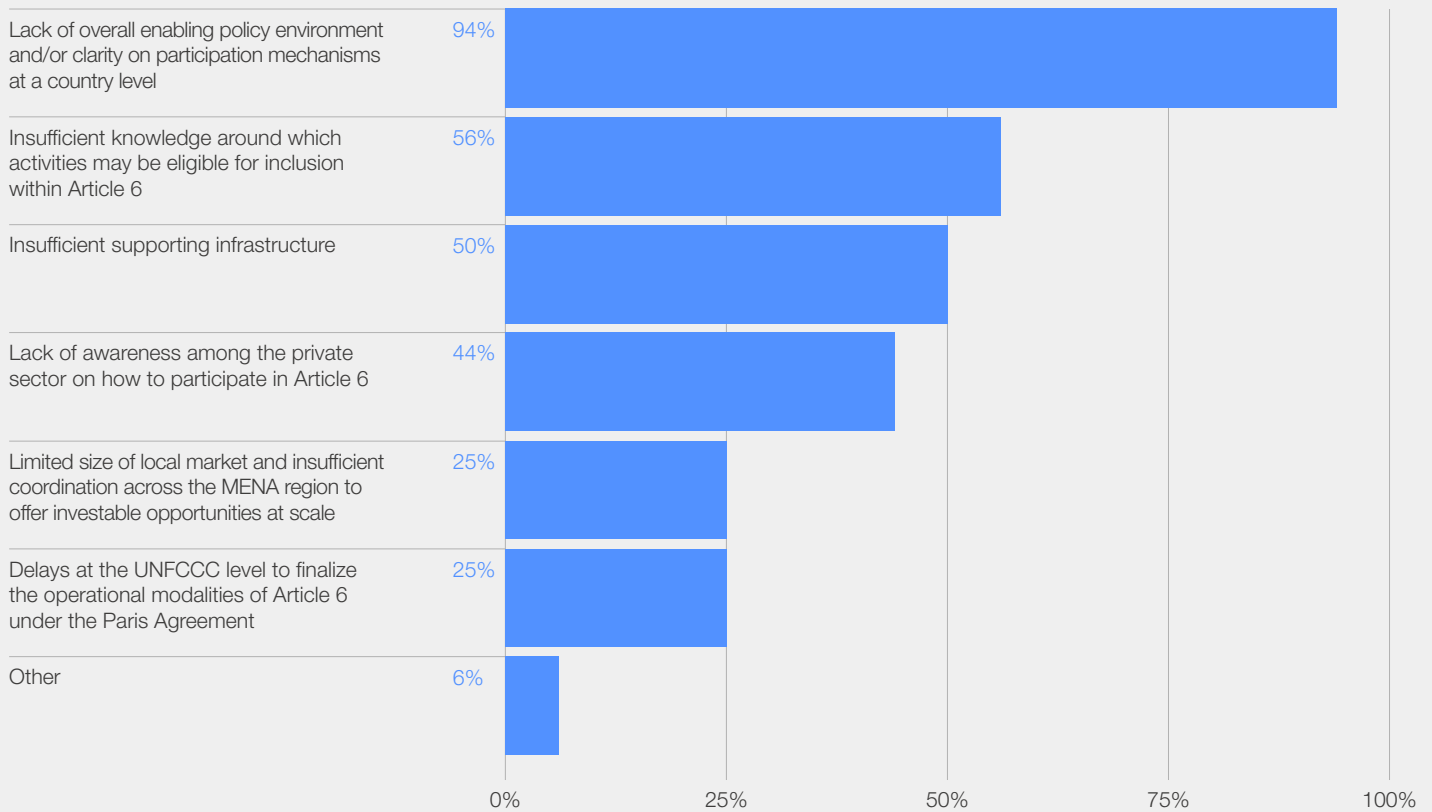
Insufficient supporting infrastructure

Half the respondents identified insufficient supporting infrastructure, such as a lack of national registries or MRV systems, as hampering the development of the Article 6 market. This reflects a need to implement a robust market infrastructure that ensures transparency and traceability around carbon credits and provides a trustworthy environment for the private sector in the region.

The World Bank, International Emission Trading Association (IETA), and government of Singapore

launched the [Climate Action Data Trust](#) - an open source global platform that aggregates and harmonizes carbon market data, as well as connects national carbon registries across the world. The ultimate goal is to enhance the transparency and interoperability of data and registry systems in the carbon markets. Governments can adopt independent registries or the upcoming international registry provided by the UNFCCC. However, it is essential to involve non-governmental actors in discussions to decide best practices around technicalities in infrastructure and to consider specific stakeholder's needs in local contexts.

FIGURE 6 Challenges in implementing an operational carbon market under Article 6 in the MENA region⁴⁷



4 Recommendations to expand Article 6 across MENA

MENA countries should develop a clear, unified legal framework that includes provisions for voluntary and compliance carbon markets.

↓ Image credit:
primeimages



The following recommendations to accelerate the speed and expand the scale of Article 6 markets across the MENA region are based on the current challenges that stakeholders face in the region. They also benefit from the collective wisdom of the [World Economic Forum's Carbon Market Innovation Initiative](#), a platform for a community of business leaders, governments and experts that encourages dialogue to better understand the challenges and opportunities of carbon markets.

Establish a regional Article 6 governance framework with guidelines on how to participate

Any guidelines will need to meet the requirements under Article 6 while leveraging existing national carbon market infrastructure. An important first step towards establishing a solid governance framework is to learn from the deal-tracking and transfer systems of other countries. For example, Morocco, Tunisia, the UAE and Saudi Arabia might pave the way for other states in MENA.

By adapting ongoing agreements and understanding locally specific concerns that stakeholders may have, governments can work towards providing the proper safeguards under bilateral agreements to encourage key stakeholder participation. Furthermore, participation guidelines should cover the repercussions of non-compliance with standards for quality, integrity and delivery of transactions in order to create clarity on what liabilities may exist and how these issues could be resolved.

Evaluate eligible Article 6 carbon reduction activities that align with credible NDC compliance

Assessing the appropriateness of various climate projects or activities for involvement in global market mechanisms is necessary to determine which activities in the MENA region are eligible under Article 6 of the Paris Agreement. To do this, MENA countries should examine their NDCs and determine the sectors and activities where emissions reductions or removals are a priority. Additionally, countries should explore prospective climate initiatives that align with their climate goals and priorities while maintaining social and environmental safeguards.

During this process it is important to remember that the main priority for countries is to comply with their NDCs. Therefore, the eligibility of Article 6 activities should be based on the capacity of each country to achieve its long-term domestic decarbonization, while catalysing additional mitigation outcomes that could be used towards NDCs and their sustainable development co-benefits. In line with this, countries should prioritize collaboration with

key stakeholders throughout the process to develop a comprehensive framework that is understood and adopted by all parties involved.

Enhance the infrastructure needed to implement Article 6 operationalization

Enhancing a digital transaction infrastructure in the MENA region for Article 6 compliance is key to ensuring transparency and confidence in the carbon market. To build this infrastructure, countries will need to:

- Assess current capabilities
- Establish secure digital registries that define the use of an international, regional or national approach
- Adopt digital tools for data collection
- Ensure interoperability with international systems (e.g. Climate Action Data Trust)

To achieve this, countries are advised to look for international collaboration (e.g. Jordan digital MRV free source software) to leverage existing expertise and foster interoperability. Enhanced infrastructure can enable effective participation in carbon markets and cooperation mechanisms.

Find synergies between future compliance carbon markets and regional voluntary carbon initiatives

Under Article 6, countries can develop their own approaches. For MENA nations, finding synergies between different carbon markets and mechanisms across the region could unlock new opportunities for emissions reduction initiatives, attract investment and accelerate progress towards climate goals. To successfully navigate these complicated markets, cooperation, transparent regulations and unified standards will be essential.

Accordingly, to ensure fungibility between different carbon market segments, it is important to develop a clear and unified legal framework that includes provisions for voluntary and compliance carbon markets. Exploring mechanisms for linking the regional voluntary carbon market with international compliance markets could create additional demand for carbon credits that would be beneficial for market stability.

Equally, countries should support projects developed in the voluntary carbon market that can transition into compliance carbon markets or qualify

“ MENA countries should examine their NDCs and determine the sectors and activities where emissions reductions or removals are a priority.

for Article 6 mechanisms. However, care needs to be taken when selecting appropriate projects as some may not be tradeable under Article 6. Nonetheless, emission reductions will still be of value to nations and businesses seeking to meet NDCs and climate mitigation goals, but the impact of not being able to monetize those emission reductions needs to be assessed to understand the economics of the activities.

Investing in capacity-building efforts to equip local stakeholders with the skills and knowledge needed to navigate various carbon markets and mechanisms is needed to secure private sector participation.

Strengthen public-private interactions to provide clear market signals and promote private sector participation

While the private sector can play different roles in the Article 6 ecosystem, it acts mainly as seller, developer or buyer. Understanding when and how to participate can make a significant impact on their participation. By establishing public-private sector communications channels, private sector organizations can better understand the status, needs and opportunities of carbon markets. This can not only spark local interest for developers but also attract foreign investment by providing valuable information for their financial due diligence.

In addition, with the help of international organizations such as the UN Development Programme (UNDP), public-private partnerships can be organized to mitigate risk and provide a financial reward out of project development in an Article 6 context. This can stimulate local investment while

contributing to achieving governmental climate pledges. To set up a successful public-private partnership, capacity building is required to educate actors on the rights and responsibilities that come with each role,⁴⁸ along with timelines to align with the country's NDC strategy.

Approach to align Article 6 initiatives with MENA stakeholders' interests

Many organizations globally have focused their expertise and resources on accelerating the level of participation in Article 6.4 to ensure a fluid and credible marketplace for carbon reduction activities. From international organizations and NGOs to countries and private sector entities, there is a concerted effort across a wide range of activities to operationalize Article 6. Initiatives include registry development, JCM's efforts to increase participation in Article 6.2, and work by the UN Supervisory Body on finalizing credibility criteria to generate a tradeable carbon reduction outcome in terms of ITMOs and A6.4ERs and on registry infrastructure.

The success of these initiatives and the wider Article 6 process depend on the engagement of all stakeholders to find cooperative and consensus-based approaches. Such engagements can work particularly well in a context such as MENA to enhance capacity building, encourage regional action and accelerate activity. Some relevant initiatives working towards operationalizing Article 6 in MENA are outlined in Table 2. Governments, organizations and private entities have the opportunity to engage with these initiatives in accordance with their specific interests, feedback and inquiries related to their participation in the Article 6 ecosystem.

TABLE 2 | Initiatives working towards operationalizing Article 6 across the MENA region

Initiative operating in MENA	Description
World Economic Forum's Carbon Market Innovation Initiative	Encourages dialogue to better understand the challenges and opportunities of carbon markets; supports the development of high-integrity carbon markets and helps address the fundamental issues that are slowing the adoption of these markets.
Africa Carbon Markets Initiative (ACMI)	Supports stakeholders in Africa to scale the supply and demand of high-integrity African carbon credits. Intends to grow Africa's carbon credit retirements to over 1.5 GtCO ₂ e annually by 2050 and mobilize funds over \$100 billion per year by 2050. ⁴⁹
Middle East and North Africa (MENA) Voluntary Carbon Market (VCM)	Formed by Saudi Arabia's Public Investment Fund, it is aimed at channelling funds and support for its member partners in the supply, purchase and trading of high-quality voluntary carbon credits. ⁵⁰
GGGI DAPA Program (Morocco)	The Global Green Growth Institute (GGGI) in collaboration with the Government of Morocco has launched a programme called Designing Article 6 Policy Approaches (DAPA). The programme supports host countries with policy-based crediting approaches and the design of mitigation activities. This includes the development of MRV systems, design of governance frameworks and capacity building for stakeholders around purchase agreements. ⁵¹
Global Carbon Council (GCC)	The GCC aims to assist organizations to reduce their carbon footprints and help the sectoral economy to diversify by adopting low-carbon pathways. Assistance includes support in implementing GHG reduction measures and the establishment of a market system between project developers and investors to fund GHG reduction projects, among other activities. ⁵²
Carbon Payment for Development (CP4D)	A UNDP initiative that adopts a market-orientated approach to encouraging private and state-owned enterprises to identify and invest in opportunities that not only provide products or services but also contribute to a country's NDCs or GHG reduction targets. ⁵³
Regional Collaboration Centre (RCC) for MENA and South Asia	Created by UNFCCC and the World Green Economy Organization, the RCC helps channel local, regional and global resources to support the implementation of NDCs, Article 6, climate finance and stakeholder engagement through facilitating capacity building, technical assistance and strategic networking. ⁵⁴

Conclusion

It is time to double-down on efforts to make Article 6 trading a reality in MENA and unblock financial flows that could transform the region and its approach to climate risk.

Article 6 can be a turning point in the world's progress towards net zero. It provides a framework for creating robust, trusted carbon markets that can attract the investment required to decarbonize the global economy at scale and speed.

Significant progress has been made in operationalizing Article 6. The first Article 6.2 trades are expected soon and Article 6.4 should be operational in 2024. The world is moving closer to internationally endorsed standards for project eligibility and credit quantification, for governance structures at national and international levels, and for the infrastructure needed to register and track the trading of credits.

However, challenges remain such as maintaining trust in the quality of credits. There is still some way to go to establish the full infrastructure and common standards (including a globally consistent definition of a carbon credit) needed to support smoothly functioning international markets. The global community must work together on this. Nations must create the legislation and infrastructure to facilitate transactions and cooperate to track how credits are registered, transferred and applied to nations' NDCs.

The MENA region possesses immense mitigation potential through its access to abundant renewable energy and financial capital, especially at a time when capital is looking for solutions in the areas of climate, environmental and social action. MENA is a highly heterogeneous region with both an urgent need and a great potential for regional cooperation. On the one hand, it benefits from a broad diversity of capital and a strong commitment to NDCs. On the other, many countries in the region need a large portion of that capital to decarbonize their hard-to-abate sectors.

Progress towards implementing Article 6 in the region is varied. Some countries have already taken part in pilot projects, such as Morocco, Saudi Arabia, Tunisia and the United Arab Emirates. But greater implementation of Article 6 could support economic diversification and green growth across the MENA region, particularly for countries heavily

reliant on fossil fuel exports. By incentivizing emission reductions and promoting sustainable practices, countries can transition towards low-carbon economies and unlock new economic opportunities, such as green technologies and services.

While the private sector's ambition to meet its decarbonization targets has stimulated significant demand for voluntary carbon markets in the MENA region, compliance carbon markets need to catch up. Article 6 is of significant importance in bringing these markets closer together and ensuring their credibility, integrity and transparency for regulatory and decision-making purposes. Implementing Article 6 is a process that requires a strong policy framework, coordination between ministries and strong incentives for private sector investment to facilitate market development.

Governments need to clarify priorities by establishing clear rules and adopting an implementation plan for their NDCs. Countries need to understand the transactions required to meet buyer and seller criteria and where projects can be permitted.

The infrastructure for measuring, reporting and verifying emissions, crucial to the establishment of robust carbon markets, needs to be massively developed. The MENA region includes countries with diverse socio-economic backgrounds, ranging from oil-dependent economies to developing nations. Harmonizing carbon pricing policies and ensuring fairness between different countries and sectors can be complex.

There are high expectations for COP28. Negotiations are at a key determining stage to accelerate the implementation of Article 6. If nations succeed in operationalizing Article 6, it could help spur a flood of urgently needed investment into carbon reduction. COP28 could also spark far-reaching climate action in MENA by embracing ground-breaking new technologies and prioritizing early wins. With all eyes on the region, MENA can offer lessons for how to get Article 6 right, while underlining the complex challenges of developing the appropriate governance, financing mechanisms and infrastructure.

“ While the private sector's ambition to meet its decarbonization targets has stimulated significant demand for voluntary carbon markets in the MENA region, compliance carbon markets need to catch up.

Contributors

World Economic Forum

Nasim Pour

Lead, Carbon Removals and Market Innovation

PwC

Ian P. Milborrow

Sustainability, Partner, PwC United Kingdom

Carolina Agudelo

Sustainability and Climate Change, Director, PwC Colombia

Cameron Stonestreet

Sustainability and Climate Change, Director, PwC Canada

Nicolas Rodríguez

Sustainability and Climate Change, Senior Associate, PwC Colombia

Carlos Emilio Torres

Sustainability and Climate Change, Senior Associate, PwC Colombia

Advisory Board

Syed Adeel Abbas

MENA Climate Change Coordinator, World Bank

Fenella Aouane

Head of Carbon Pricing Global Practice and Director, Global Green Growth Institute

Andrea Bonzanni

International Policy Director, International Emissions Trading Association

Mischa Classen

Article 6 Negotiator & Managing Director, Classen Consulting

Seoyi Kim

Climate Finance Specialist, World Bank

Hugh Salway

Senior Director, Market Development and Partnerships, The Gold Standard Foundation

Ely Sandler

Research Fellow, Science, Technology and Public Policy Program, Harvard Kennedy School

Chandra Shekhar Sinha

Global Lead for Carbon Markets and Finance, Climate Finance and Economics, World Bank

Gemma Torras i Vives

Climate & Technology Specialist, World Bank

Acknowledgements

Dalia Abdel Kader

Chief Sustainability Officer, Commercial International Bank (CIB) Egypt

Naoufal Alami

Head of Commodities and Energy Transition Trading, First Abu Dhabi Bank

Ivano Iannelli

Senior Consultant – Sustainability Corporate, MD, CEO & Executive Offices, Emirates Global Aluminium

Francois Megret

Executive Director, Global Markets Products, First Abu Dhabi Bank

Venetia Bell

Group Chief Sustainability Officer, Head of Strategy, GIB AM, Gulf International Bank (UK) Limited

Vijay Bains

Chief Sustainability Officer, Group Head of ESG, Emirates NBD

Kavya Bajaj

Government Relations Manager, Market Development and Partnerships, The Gold Standard Foundation

Yahya Anouti

Energy, Resources & Sustainability, Partner, PwC Middle East

Sarah Brown

Strategy and Communications, Director, PwC United Kingdom

Emma Cox

Global Climate Leader, Partner, PwC United Kingdom

Bram de Graaff

Global Impact Centre Lead, Director, PwC Middle East

Matthew Gilbert

Sustainability and Climate Change, Manager, PwC New Zealand

Niels Muller

Energy, Utilities & Resources, Tax Partner, PwC Netherlands

Barry Murphy

Tax and Legal Services, Tax Partner, PwC United Kingdom

Pedro Schoueri

International Tax, Senior Manager, PwC Netherlands

Mahamadou Tounkara

Regional Director, MENA, Green Growth Planning & Implementation Division, Global Green Growth Institute

Editing and design

Jonathan Walter

Editor

Albert Badia

Designer

The World Economic Forum would also like to acknowledge the valuable contribution of Dubai Airports to this publication and extend particular thanks to Rekibudden Ahmed, Benjamin Bridgeland, Sven Deckers and Manish Sethi.

Endnotes

1. Government of Singapore, Ministry of Sustainability and the Environment, Singapore Sets Out Eligibility Criteria For International Carbon Credits Under The Carbon Tax Regime, 4 October 2023, <https://www.mse.gov.sg/resource-room/category/2023-10-04-eligibility-criteria-for-international%20carbon%20credits>.
2. The Nature Conservancy, Article 6 Explainer, Questions And Answers About The COP27 Decisions On Carbon Markets And What They Mean For NDCs, Nature, and The Voluntary Carbon Markets, 2023, https://www.nature.org/content/dam/tnc/nature/en/documents/TNC_Article_6_Explainer_260523.pdf.
3. The Nature Conservancy, Article 6 Explainer, Questions And Answers About The COP27 Decisions On Carbon Markets And What They Mean For NDCs, Nature, and The Voluntary Carbon Markets, 2023, https://www.nature.org/content/dam/tnc/nature/en/documents/TNC_Article_6_Explainer_260523.pdf.
4. The Nature Conservancy, Article 6 Explainer, Questions And Answers About The COP27 Decisions On Carbon Markets And What They Mean For NDCs, Nature, and The Voluntary Carbon Markets, 2023, https://www.nature.org/content/dam/tnc/nature/en/documents/TNC_Article_6_Explainer_260523.pdf.
5. United Nations, Climate Action, All About the NDCs, 2023, <https://www.un.org/en/climatechange/all-about-ndcs>.
6. United Nations Development Programme (UNDP), Ghana, Vanuatu, and Switzerland launch world's first projects under new carbon market mechanism set out in Article 6.2 of the Paris Agreement, 12 November 2022, <https://www.undp.org/geneva/press-releases/ghana-vanuatu-and-switzerland-launch-worlds-first-projects-under-new-carbon-market-mechanism-set-out-article-62-paris-agreement>.
7. Global Green Growth Institute, Technical Report No. 25 - Developing Carbon Markets based on Article 6 of the Paris Agreement: Challenges and Opportunities, 25 December 2022, https://gggi.org/wp-content/uploads/2023/01/230103_GGGI_article6_20230113_1.pdf. Sources:
8. United Nations Framework Convention on Climate Change (UNFCCC), Transition of CDM activities to Article 6.4 mechanism, 2023, <https://unfccc.int/process-and-meetings/the-paris-agreement/article-64-mechanism/transition-of-cdm-activities-to-article-64-mechanism>.
9. The Oxford Institute For Energy Studies. 2022. New Oxford Energy Forum – The Evolution of Carbon Markets and their Role in Climate Mitigation and Sustainable Development – Issue 132, June 2022, <https://www.oxfordenergy.org/publications/new-oxford-energy-forum-the-evolution-of-carbon-markets-and-their-role-in-climate-mitigation-and-sustainable-development-issue-132/>.
10. International Carbon Action Partnership (ICAP), Offset Use Across Emissions Trading Systems, January 2023, https://icapcarbonaction.com/system/files/document/ICAP%20offsets%20paper_vfin.pdf.
11. Adapted from: Global Green Growth Institute, Summary Report: Designing Governance Structures and Transactional Documentation for Mitigation Outcome Transactions under Article 6 of the Paris Agreement, January 2021, https://gggi.org/wp-content/uploads/2021/03/MATS_Summary-Report_FINAL.pdf.
12. BP, Statistical Review of World Energy 2021, 70th edition, July 2021, <https://www.bp.com/content/dam/bp/business-sites/en/global/corporate/pdfs/energy-economics/statistical-review/bp-stats-review-2021-full-report.pdf>.
13. Intergovernmental Panel on Climate Change, Climate Change 2022: Mitigation of Climate Change, p.10, 2022, https://www.ipcc.ch/report/ar6/wg3/downloads/report/IPCC_AR6_WGIII_FullReport.pdf.
14. Sources
 - Climate Watch, Net-Zero Tracker, 2023, <https://www.climatewatchdata.org/net-zero-tracker?locations=MNA>.
 - Energy & Climate Intelligence Unit, Net Zero Scorecard, 2023, <https://eciu.net/netzerotracker>.
15. The World Bank, Carbon Pricing Dashboard, 2023, <https://carbonpricingdashboard.worldbank.org/>.
16. Energy & Climate Intelligence Unit, Net Zero Scorecard, 2023, <https://eciu.net/netzerotracker>.
17. As per NDC declaration up to July 2023
18. United Nations Environment Programme (UNEP), Copenhagen Climate Centre, Article 6 Pipeline, 2 November 2023, <https://unepccc.org/article-6-pipeline/>.
19. United Nations Environment Programme (UNEP), Copenhagen Climate Centre, Article 6 Pipeline, 2 November 2023, <https://unepccc.org/article-6-pipeline/>.
20. Global Environment Centre Foundation, Overview of the Joint Crediting Mechanism (JCM), <https://gec.jp/jcm/about/>.
21. Saudi Press Agency, RVCMC to Conduct World's Largest Voluntary Carbon Credit Auction Event in Nairobi, Kenya, 5 June 2023, <https://www.spa.gov.sa/en/bf075f99afs>.
22. Benny, John, Saudi carbon credit company to launch exchange in early 2024, chief executive says, The National, 13 June 2023, <https://www.thenationalnews.com/climate/road-to-net-zero/2023/06/13/saudi-carbon-credit-company-to-launch-exchange-in-early-2024-chief-executive-says/>.
23. The National, New alliance to develop UAE carbon market, 7 June 2023, <https://www.thenationalnews.com/climate/road-to-net-zero/2023/06/07/new-alliance-to-develop-uae-carbon-market/>.

24. First Abu Dhabi Bank, FAB partners with Masdar and Blue Carbon to accelerate MENA carbon trading market, 2 October 2023, <https://www.bankfab.com/en-ae/about-fab/group/in-the-media/fab-partners-with-masdar-and-blue-carbon-to-accelerate-mena-carbon-trading-market#:~:text=Introduced%20during%20the%20UAE%20Year.and%20offsets%20for%20corporate%20and.>
25. The World Bank, Countries on the Cusp of Carbon Markets, 24 May 2022, <https://www.worldbank.org/en/news/feature/2022/05/24/countries-on-the-cusp-of-carbon-markets>.
26. Khan, Sarmad, UAE Ministry of Climate Change signs pact to develop national system for carbon credits, The National, 7 August 2023, <https://www.thenationalnews.com/business/2023/08/07/uae-ministry-of-climate-change-signs-pact-to-develop-national-system-for-carbon-credits/>
27. World Economic Forum, Why technology is key to decarbonising the Middle East and North Africa, 22 May 2023, <https://www.weforum.org/agenda/2023/05/why-technology-is-key-to-decarbonising-the-middle-east-and-north-africa/>.
28. The World Bank Group, Middle East & North Africa Climate Roadmap (2021-2025), <https://thedocs.worldbank.org/en/doc/6f868d4a875db3ef23ef1dc747fcf2ca-0280012022/original/MENA-Roadmap-Final-01-20.pdf>.
29. Dourian, Kate, Solar and Wind Energy Driving the Middle East's Energy Transition, The Arab Gulf States Institute in Washington, 9 June 2023, <https://agsiw.org/solar-and-wind-energy-driving-the-middle-east-energy-transition/>.
30. International Renewable Energy Agency (IRENA), Planning and prospects for renewable power: North Africa, 4 January 2023, <https://www.irena.org/Publications/2023/Jan/Planning-and-prospects-for-renewable-power-North-Africa>.
31. International Energy Agency (IEA), Renewables 2022: Analysis and forecast to 2027, <https://iea.blob.core.windows.net/assets/64c27e00-c6cb-48f1-a8f0-082054e3ece6/Renewables2022.pdf>.
32. Commercial International Bank Egypt, Principles for Responsible Banking, Self-Assessment Report, 2023, <https://www.cibeg.com/-/media/project/downloads/about-cib/cib-corporate-responsibility-formerly-community/cib-prb/cib-2023-principles-for-responsible-banking.pdf>.
33. Cantini, Giampaolo, Hydrogen in the MENA region: Priorities and steps forward, Atlantic Council, 14 February 2023, <https://www.atlanticcouncil.org/blogs/energysource/hydrogen-in-the-mena-region-priorities-and-steps-forward/>.
34. World Oil, ADNOC to develop one of the largest carbon capture, storage projects in MENA region, 6 September 2023, <https://worldoil.com/news/2023/9/6/adnoc-to-develop-one-of-the-largest-carbon-capture-storage-projects-in-mena-region/>.
35. Sources:
 - International Energy Agency (IEA), Unlocking the potential of direct air capture: Is scaling up through carbon markets possible?, 11 May 2023, <https://www.iea.org/commentaries/unlocking-the-potential-of-direct-air-capture-is-scaling-up-through-carbon-markets-possible>.
 - International Energy Agency (IEA), Direct Air Capture 2022, Executive Summary, <https://www.iea.org/reports/direct-air-capture-2022/executive-summary>.
36. World Oil, ADNOC to develop one of the largest carbon capture, storage projects in MENA region, 6 September 2023, <https://worldoil.com/news/2023/9/6/adnoc-to-develop-one-of-the-largest-carbon-capture-storage-projects-in-mena-region/>.
37. CCS+ Initiative, 2023, <https://www.ccsplus.org/>.
38. South Pole, et al., Hydrogen for Net Zero Initiative: Unlocking the power of low-carbon hydrogen, 2023, <https://www.southpole.com/hydrogen-for-net-zero-initiative>.
39. Abu Dhabi National Oil Company (ADNOC), Our Natural Heritage, <https://adnoc.ae/en/corporate-responsibility/our-natural-heritage>.
40. Sources:
 - Oman Observer, Oman to plant 10 million trees, 3 November 2021, <https://www.omanobserver.om/article/1109108/oman/environment/oman-to-plant-10-million-trees>.
 - Sultanate of Oman, Environment Authority, National Initiative for Plantation of 10 Million Trees, <https://ashjar.gct.om/Default.aspx>.
41. Moneer, Zeina, Is blue the new green? Opportunities for developing a climate-resilient blue economy in the MENA region, Middle East Institute, 10 May 2023, <https://www.mei.edu/publications/blue-new-green-opportunities-developing-climate-resilient-blue-economy-mena-region>.
42. Blue Carbon, Who we are, 2022, <https://bluecarbon.ae/about>.
43. Belhaj, F., COPs Offer Middle East-North Africa A Climate Leadership Role, Forbes Middle East, 14 November 2022, <https://www.forbesmiddleeast.com/leadership/opinion/cops-offer-middle-east-north-africa-a-climate-leadership-role>.
44. Belhaj, F., COPs Offer Middle East-North Africa A Climate Leadership Role, Forbes Middle East, 14 November 2022, <https://www.forbesmiddleeast.com/leadership/opinion/cops-offer-middle-east-north-africa-a-climate-leadership-role>.
45. Gold Standard et al., Co-Operating For The SDGs: Article 6 Through A Sustainable Development Lens, March 2022, https://www.goldstandard.org/sites/default/files/co-operating_for_the_sdgs_article_6_through_a_sustainable_development_lens.pdf.

46. United Nations Environment Programme (UNEP), Copenhagen Climate Centre, Article 6 Pipeline, 2 November 2023, <https://unepccc.org/article-6-pipeline/>.
47. Data was obtained via an electronic survey conducted by PwC on behalf of the Carbon Markets Innovation Initiative on a confidential basis. The survey involved 30+ Article 6, carbon market and MENA regional experts and key stakeholders. It was conducted from June-July 2022. There were well over 20 respondents but only 16 respondents fully completed the survey and results are based solely on the 16 respondents.
48. Soezer, Alexandra, How UNDP catalyzes Innovative Public-Private Partnerships that reduce Carbon Emissions, Columbia University in the City of New York, 6 February 2023, <https://multilateralism.sipa.columbia.edu/news/how-undp-catalyzes-innovative-public-private-partnerships-reduce-carbon-emissions>.
49. Africa Carbon Markets Initiative (ACMI), Harnessing Carbon Markets for Africa, 2023, <https://africacarbonmarkets.org/>.
50. Arab News, Saudi PIF launches Regional Voluntary Carbon Market Co. with \$133m capital, 25 October 2022, <https://www.arabnews.com/node/2187281/business-economy>.
51. Global Green Growth Institute, Technical Report No. 25 - Developing Carbon Markets based on Article 6 of the Paris Agreement: Challenges and Opportunities, 25 December 2022, https://ggi.org/wp-content/uploads/2023/01/230103_GGGI_article6_20230113_1.pdf.
52. Global Carbon Council, Welcome to Global Carbon Council, 2023, <https://www.globalcarboncouncil.com/about-gcc/global-carbon-council/>.
53. United Nations Development Programme (UNDP), Carbon payment for development: Leveraging carbon markets to enable private investments in support of the SDGs, <https://carboncooperation.undp.org/cpford>.
54. United Nations Framework Convention on Climate Change (UNFCCC), About RCC MENA and South Asia, <https://unfccc.int/about-us/regional-collaboration-centres/rcc-for-the-middle-east-north-africa-and-south-asia/about-rcc-mena-and-south-asia>.



COMMITTED TO
IMPROVING THE STATE
OF THE WORLD

The World Economic Forum, committed to improving the state of the world, is the International Organization for Public-Private Cooperation.

The Forum engages the foremost political, business and other leaders of society to shape global, regional and industry agendas.

World Economic Forum
91–93 route de la Capite
CH-1223 Cologny/Geneva
Switzerland

Tel.: +41 (0) 22 869 1212
Fax: +41 (0) 22 786 2744
contact@weforum.org
www.weforum.org