



UNITED ARAB EMIRATES
MINISTRY OF CLIMATE CHANGE
& ENVIRONMENT

The United Arab Emirates' Third Nationally Determined Contribution (NDC 3.0)

Accelerating Action Towards Mission 1.5C

November 2024

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1. Introduction

The United Arab Emirates (UAE) recognizes the urgency of the climate crisis. Given its unique geographic and climatic conditions, the nation faces significant vulnerabilities to climate change, including rising temperatures and sea levels, increased humidity, water scarcity, and a greater frequency of more extreme weather events. The UAE has also seen extensive impacts from climate change globally, from destructive storms to drought-induced food insecurity and displacement. At the same time, the UAE recognizes the potential socio-economic benefits of climate action, such as job creation, improved human health, and economic diversification.

In recognizing the enormity of these challenges and opportunities, the UAE has embarked on a transformative journey from a fossil-fuel-based economy to a knowledge-based green economy, emphasizing the need for a comprehensive and inclusive approach to sustainable development. This Third Nationally Determined Contribution (NDC) marks a significant milestone on the UAE's ongoing journey, underscoring its commitment to contributing to the achievement of global climate goals. This NDC sets a target of reducing emissions by 47% by 2035 compared to the 2019 baseline, paving the way to ensure 1.5°C remains within reach.

As a Party to the United Nations Framework Convention on Climate Change (UNFCCC) and the Paris Agreement, the UAE is committed to support global efforts to keep 1.5°C within reach. After its initial NDC in 2016, which focused on sector-specific targets for clean and renewable energy, the UAE made significant progress by introducing economy-wide emission reduction targets in its second NDC in 2020. These targets were defined as reductions from a business-as-usual scenario. In 2022, the UAE heightened the ambition of these targets with a revised second NDC. The UAE further solidified its commitment by unveiling a strategic initiative aimed at achieving net zero emissions by 2050 through transformation of all sectors of the economy. The Third Update of the Second NDC, submitted in 2023, had set absolute emission reduction targets based on a 2019 baseline, replacing the previous business-as-usual reference. Most recently, as the presidency of COP28, the UAE was proud to facilitate the landmark UAE Consensus and other outcomes, collectively driving greater ambition on adaptation, mitigation, the response to Loss and Damage, means of implementation, and inclusion.

This ambition is a critical component of the UAE's own strategy to enhance its climate action and strengthen its 2035 targets, as called for by the latest science, the outcome of the first Global Stocktake, and the efforts of the "Roadmap to Mission 1.5 COP Presidencies Troika".

Building on this history of climate action, the UAE's third NDC outlines a unified vision for addressing climate change that is aligned and informed by the UAE Consensus adopted at COP28. The UAE Consensus emphasizes the need for accelerated action across all pillars of the Paris Agreement and serves as a roadmap for enhancing mitigation ambition, scaling up adaptation efforts, and aligning financial flows with low-carbon, climate-resilient development pathways. The UAE's third NDC integrates these priorities and aligns with the momentum called for by the UAE Consensus, ensuring that the targets are consistent with the 1.5°C goal. It also deepens the UAE's view of climate action and economic growth as mutually

reinforcing objectives, and of climate action as an essential component of international cooperation and good global citizenship.

The UAE Net Zero Strategy was developed to align decarbonization goals with socio-economic growth and opportunities. This alignment was formalized through a UAE Cabinet decision, following an initial approval of the net zero pathway announced at COP27 in October 2022. The strategy was further supported by a formal charter, signed by the governments of the seven Emirates.

1.1 Importance of the UAE's 3rd NDC

The UAE's announcement of its Net Zero by 2050 strategy underscores its recognition of the urgent need for all countries to strengthen their climate commitments. This strategic initiative is designed to establish effective policy frameworks and detailed roadmaps to achieve substantial emissions reductions and pathways to build resilience. By transitioning from business-as-usual scenario targets to base-year and fixed-level targets in the UAE's previous NDC submission (Update to Second NDC, Jul 2023), the UAE enhances the clarity, transparency, and understanding of its climate commitments. This methodological shift simplifies the tracking and accounting of progress, making it easier to align with the Paris Agreement's stair-stepping mechanism for increasing ambition over time.

The submission of the UAE's Third NDC ("NDC 3.0") represents a crucial step in the nation's ongoing commitment to global climate action. Building on the momentum of the previous NDC submissions, the UAE NDC 3.0 integrates the outcomes of the Global Stocktake (GST), the UAE Consensus, and the objectives set out by the "Roadmap to Mission 1.5" COP Presidencies Troika. This enhanced NDC reflects the UAE's determination to lead by example and accelerate its climate actions, aiming to limit the global temperature rise to 1.5°C.

The GST Outcome at COP28, together with the broader UAE Consensus and the work under the Troika, has provided a strong impetus for the UAE NDC 3.0. The outcome of the first GST notably emphasizes the need to transition away from fossil fuels in energy systems in a just, orderly and equitable manner, urging parties to adopt ambitious, economy-wide emission reduction targets. It also sets new benchmarks, such as tripling renewable energy capacity and doubling energy efficiency gains by 2030. Additionally, the UAE Consensus highlights the importance of scaling adaptation finance to meet the urgent needs of vulnerable communities and reforming the global financial architecture to support these efforts.

In response to these directives, the UAE NDC 3.0 aims to deliver enhanced, whole-of-economy absolute emissions reductions. This ambitious approach is designed to keep the 1.5°C target within reach, reflecting the UAE's proactive stance in global climate leadership. The inclusive and consultative process employed in developing this NDC ensures comprehensive government ownership and stakeholder engagement, thereby reinforcing the nation's commitment to a participatory approach.

1.1.1 Historical Overview of the UAE's increasing ambitions

Since the country's founding, the UAE's development trajectory has been marked by significant milestones and a steadfast commitment to environmentalism, sustainability, and addressing the global climate crisis. The nation acknowledges that climate change poses severe threats and has proactively implemented measures to mitigate these risks and adapt to their impacts, both domestically and internationally.

Recognizing the urgent need for climate action, the UAE has consistently demonstrated leadership in this area. The UAE was the first Gulf Cooperation Council (GCC) country to ratify the Paris Agreement, setting a precedent for regional climate action. This commitment was further reinforced in 2017 with the development of the National Climate Change Plan 2017-2050. This comprehensive framework was designed to manage greenhouse gas emissions, adapt to climate change, and promote economic diversification through private sector innovation. The plan underscored the UAE's dedication to aligning its national policies with international climate goals and enhancing its role in global climate governance. This achievement is further demonstrated by the UAE's efforts, having met the Aichi target of protecting at least 18.4% of terrestrial inland water and 12.1% of coastal and marine areas ahead of the 2030 deadline.

In 2021, the UAE took another significant step by announcing its Net Zero by 2050 Strategic Initiative, becoming the first country in the MENA region to commit to achieving net zero emissions by mid-century. This initiative is designed to transform all sectors of the economy to align with the Paris Agreement's objectives, showcasing the UAE's ambition to integrate environmental sustainability with economic growth. The strategic initiative aims to leverage advanced technologies, foster innovation, and create new economic opportunities, reinforcing the UAE's position as a regional leader in sustainable development.

The UAE has been investing in renewable energy for over a decade, establishing itself as a leader in the region's clean energy sector. The development of projects such as the Mohammed Bin Rashid Solar Park (set to generate up to 5,000 MW by 2030), Noor Solar Plant (1,200MW – operational since 2013), Shams (100 MW – operational since 2013), and the Al Dhafra Project (2,100 MW) exemplifies the UAE's commitment to increasing its clean energy capacity. The Barakah nuclear power plant, operational since 2021, further highlights the UAE's efforts to diversify its energy mix and reduce carbon emissions. These projects are pivotal in the UAE's strategy to meet its ambitious climate targets.

To support its net zero ambitions, the UAE has also focused on developing and deploying carbon capture, utilization, and storage (CCUS) technologies at scale. The establishment of the region's first industrial-scale CCUS facility in 2016 marked a pivotal moment in the UAE's decarbonization efforts. Since then, multiple projects have been initiated to capture and store carbon emissions from various industrial processes, such as the Al Reyadah CCUS Project, which includes the capture, transport and injection of up to 800,000 Tonnes of CO₂ per year. These initiatives demonstrate the UAE's commitment to employing both nature-based and engineering-based solutions to address climate change.

The UAE's comprehensive approach to climate action is reflected in its alignment of federal and emirate-level policies. The UAE Council on Climate Action, established in 2022, plays a crucial role in ensuring coherence and coordination across different levels of government. This inter-ministerial and inter-emirate governance body facilitates the integration of climate policies, aligning them with the legal and executive frameworks defined in the constitution. This whole-government approach ensures that climate action is embedded across all sectors of the economy, enhancing the effectiveness and impact of the UAE's climate strategies.

1.2 Hosting COP

In 2023, the UAE hosted the 28th session of the Conference of the Parties to the United Nations Framework Convention on Climate Change, having made a successful bid in 2021 that emphasized its

diplomatic ability to build bridges between Global North and South, and ability to host large events, as well as its whole-of-government coordinated approach.

In the bid, the UAE outlined how its economic diversification and national development plan are underpinned by climate action and sustainability. The UAE is the first country in its region to have submitted an economy-wide NDC, and the first to set a Net Zero Strategic Initiative for 2050. A leading force in financing and deploying renewable energy solutions across the globe and particularly in developing countries, the UAE also emphasized its unique position to bring together all countries, as well as key stakeholders across all sectors, to align on a pragmatic agenda focused on implementation, ambition, while highlighting the opportunities in climate action to drive prosperity.

As host of COP28, the UAE leveraged its strong diplomatic relationships with all countries – among diverse viewpoints – to come together in solidarity, enabling the delivery of the historic UAE Consensus, including an ambitious negotiated response to the first Global Stocktake under the Paris Agreement. This proved that solutions to the climate crisis can come from every region of the world. The UAE Consensus includes an unprecedented reference to transitioning away from all fossil fuels in energy systems in a just, orderly, and equitable manner in this critical decade to enable the world to reach net zero emissions by 2050, in keeping with the science. It also calls for tripling of renewable energy capacity, doubling energy efficiency improvements and halting and reversing deforestation by 2030, among other key elements. In keeping with the need for climate action to support broader sustainable development, the UAE Consensus operationalized The UAE Just Transition Work Programme, putting people at the centre to ensure there are more opportunities than drawbacks to the communities affected. The Institutionalization of a Presidency Youth Climate Champion further supported this effort. The UAE Consensus also significantly advanced our collective ambition on adaptation through the UAE Framework for Global Climate Resilience to operationalize the global goal on adaptation. The UAE Framework established seven thematic targets in key areas essential for global resilience and human wellbeing and four process targets on how we plan and implement adaptation at the national level in an iterative process towards 2030 and beyond.



On Day One of COP28, the Presidency facilitated a historic agreement to operationalize and capitalize the Fund for Responding to Loss and Damage, securing initial pledges of USD 792 million for loss and damage, delivering a major breakthrough for those on the front lines of the climate crisis. The operationalization

of the fund- the first time a substantive decision was adopted on the first day of a COP- was included in the UAE Consensus.

Reflecting its commitment to full inclusivity, the COP28 Presidential Action Agenda engaged the private sector and civil society to match negotiated outcomes with real-world results. During the two-week conference, 11 pledges were signed, with more than USD 85 billion in funding being mobilized, setting the pace for a new era of climate action. Notable achievements included the launch of ALTÉRRRA, a USD 30 billion climate investment fund dedicated to financing climate solutions, and the launch of the Oil and Gas Decarbonization Charter – the most ambitious decarbonization initiative ever for the sector.

With over 80,000 attendees, COP28 was the largest COP ever, with its commitment to fostering full inclusivity leading to increased participation of youth, Indigenous Peoples and civil society, as well as from sectors like health, food and agriculture, peace, humanitarian, trade, and others. To ensure that youth have a more significant voice in the climate process, the UAE appointed the first Youth Climate Champion (YCC), and further led to its institutionalization within the UNFCCC. The International Youth Climate Delegates Programme additionally brought 100 young people from around the world, largely SIDS and LDCs, to take part in the COP process.

COP28 delivered on its commitment to host a sustainable and inclusive conference. The venue, Expo City Dubai, was built with a strong focus on sustainability and energy efficiency standards, and further facilitated the mobility and accessibility of delegates through the use of public transport so as to reduce emissions. COP28 achieved the PAS2060 certification, the international standard for carbon neutrality.

1.3 GST Outcome

The Paris Agreement set out in 2015 that under the GST, Parties shall take stock of the implementation of the Agreement every five years— to assess the collective progress towards the achievement of its purpose and long- term goals and inform their future climate action through their NDCs.

With the IPCC AR6 report indicating that there was only a window of opportunity to act in March 2023, it was clear that the GST had the opportunity to set the tone for climate action in the next decade. Following the conclusion of its technical assessment in September 2023, the GST clearly evidenced that the world was off track to meet the Paris Agreement’s goals and highlighted that we must reduce greenhouse gas emissions by 43 per cent before 2030 to keep 1.5°C within reach.

As COP28 Presidency, the UAE worked with all parties and nonpartisan stakeholders towards the final outcome that set a roadmap to keeping 1.5 degrees within reach through the third generation of NDCs.

By setting out a comprehensive and clear roadmap on how to course correct, increase ambition, enhance action and meet the goals of the Paris Agreement, the GST outcome effectively constitutes the centrepiece of the UAE Consensus. It reflects a unified response by all Parties and is inclusive, looking back at the progress achieved, and setting a clear way forward, informed by the latest science and considering the overarching principles of equity and Common but Differentiated Responsibilities and Respective Capabilities (CBDR–RC), with encompassed responses for accelerated action across all key pillars of the Paris Agreement: Mitigation, Adaptation, and Means of Implementation.

Alongside the calls to transition away from fossil fuels in energy systems, triple renewables and double energy efficiency globally by 2030, the GST outcome also recognizes the need to peak global emissions by

2025 and encourages countries to submit economy-wide NDCs covering all sectors and gases. It also recognizes the crucial need to significantly scale up adaptation finance to meet urgent and evolving needs and calls for countries to deliver National Adaptation Plans by 2025 and implement them by 2030. Finally, recognizing the critical role finance has in delivering ambition, the outcome builds momentum towards a new global climate finance architecture in support of post-2025 climate goals to be delivered at COP29 and recognizes the role of public and private finance institutions in improving the assessment and management of climate related risk and also calls for the significant scaling up of concessional and grant finance.



1.4 Enabling the Troika

A key element of the GST Outcome mandated by Parties was the establishment of the COP Presidencies “Troika” – a first of its kind collaboration that brings together the Presidency of COP28, and the Incoming Presidencies of COP29 and COP30 to significantly enhance international cooperation and the international enabling environment to stimulate ambition in the next round of NDCs through its “Road Map to Mission 1.5°C”.

The ground-breaking Presidencies Troika acts as a crucial bridge between COPs, driving ambitious and early Nationally Determined Contributions. It will take us from Dubai to Baku and on to Belém, cementing progress as we go.

The COP Presidencies Troika has undertaken efforts that are focused on building continuity and political ambition in support of the next round of NDCs that are 1.5°C-aligned and informed by the outcome of the first GST, which can drive implementation of the UAE Consensus across the key pillars of climate action. To this end, it has called on the UN-Secretary General to mobilize the entire UN System to support Parties, especially developing countries, in designing, delivering, and implementing NDCs and to submit within the mandated timeline between COP29 and February 2025. As part of the Roadmap to Mission 1.5 the UAE,

Azerbaijan, and Brazil, in their national capacities, will be among those countries who will demonstrate leadership as early as the UN General Assembly Meeting in September by providing corresponding signals of their commitment to keep 1.5 C within reach in a nationally determined manner and building global resilience, and this NDC builds on that commitment.

1.5 UAE's alignment to the Sustainable Development Goals

The UAE is committed to the UN 2030 Agenda for Sustainable Development and its 17 Sustainable Development Goals (SDGs), which all in part depend on implementation of the Paris Agreement. The UAE's Third NDC and underpinning climate strategies accordingly seek to address the nexus between climate and other social, economic, and environmental goals.

To ensure collaborative work and coherency across levels of government, the UAE Cabinet established the UAE's National Committee on SDGs in 2017, as well as embedded the SDGs within the country's overarching "We the UAE 2031" development agenda. The SDG committee is composed of more than 15 federal-level government entities taking full responsibility in assessing and aligning government policies with the SDGs, reviewing their implementation, monitoring, and reporting their progress, and engaging all necessary stakeholders in this process.

As of 2024, the UAE has achieved an SDG index score of 70.52, having achieved SDGs 1 – No Poverty, 3 – Good Health and Wellbeing, 4 – Quality Education and 10 – Reduced Inequalities, with continued growth and improvement across many of the others. The UAE has also launched its post 2030 sustainable development report on the XDGs by 2045, further compounding efforts to drive change and ensure the SDGs are established most appropriately in the UAE's stature.

2. UAE National Circumstances, Considerations of Fairness and Ambition

2.1 Overview and Description

As a young and growing nation, the UAE is committed to reducing emissions and improving its adaptive capabilities in response to global climate change. This NDC enhances the ambition from previous NDCs by increasing and adding transparency to emissions reduction targets, working towards ensuring 1.5 remains within reach given the limits of technical feasibility. In addition, the UAE continues to aid and invest in reducing emissions outside of the UAE.

2.2 Climate Profile

The UAE, situated on the Arabian Peninsula, is characterized by its hyper arid environment, severe water scarcity, and intense heat. The region experiences sporadic rainfall and has a sub-tropical climate with extremely hot summers and mild winters. Despite these harsh desert conditions, the UAE has managed to thrive. However, the escalating climate crisis is expected to further strain its environment, economy, and society.

Climate projections for the UAE and the Arabian Gulf region forecast significant temperature increases, higher humidity, extended hot and humid seasons, increased precipitation, sea level rise, and alterations in seawater salinity. Additionally, the frequency and intensity of natural disasters are expected to escalate, potentially causing substantial economic damage. For instance, rising sea levels could jeopardize critical infrastructure such as cities, harbours, roads, desalination plants, and power facilities.

The UAE is already experiencing substantial climate impacts, with average temperature increases significantly higher than the global average. Rising water temperatures threaten to cause irreversible damage to highly productive ecosystems, such as coral reefs and wetlands, which act as vital carbon sinks, such as mangroves and seagrass, thereby exacerbating climate change. Given the nation's vulnerability to even slight increases in sea levels, coastal erosion, and flooding of low-lying areas, particularly its numerous artificial islands, there is an urgent need for effective climate adaptation measures.

Recent climatic events underscore the increasing unpredictability of the UAE's weather patterns. Earlier in 2024, a severe storm brought over a year's worth of rain in less than 24 hours, leading to flash floods that disrupted transportation and daily life for millions of residents and international travellers. The UAE's National Centre of Meteorology reported up to 250 millimetres of rain, the highest ever recorded in the country. Such events highlight the growing frequency of extreme weather patterns due to climate change, which is anticipated to bring more tropical-like weather to the UAE, including intense storms and heavy rainfall.



Recognizing the profound impact of climate change and the high cost of inaction, the UAE is committed to reducing greenhouse gas emissions and enhancing its climate adaptation efforts. With approximately 85% of its population and over 90% of its infrastructure located in coastal areas, the nation is particularly susceptible to these climate risks. Consequently, the UAE is dedicated to implementing strategies that ensure climate resilience and mitigate the adverse effects of climate change on its society and economy.

2.3 Socio-economic Context

Since its founding in 1971, the UAE has experienced significant societal and economic changes. With a population nearing 11 million people and around 200 nationalities, the country is culturally and socially

diverse. This diversity necessitates engaging a broad range of stakeholders to incorporate their perspectives into decision-making processes aimed at building climate resilience and transitioning to a low-carbon future.

Historically, the UAE's economy was centred on pearl diving, fishing, and trading. Following the discovery of oil, the nation focused on developing its physical infrastructure, including roads, electricity and water generation, and ports, as well as its social infrastructure, such as schools and medical facilities. The rapid economic growth was matched with increasing population growth, which increased the demand for construction and infrastructure.



Despite being an energy exporter, the UAE has prioritized economic diversification. The non-oil sector's share of GDP has increased from approximately 30-40% in the 1970s to around 75% today, encompassing a well-developed hospitality, real estate, industrial, construction, and transport. Today, the UAE continues to expand its infrastructure, including its public transportation network, in anticipation of significant economic and population growth.

The industrial sector has deployed programs to support the development of a diverse, sustainable and globally competitive national energy and manufacturing sector, while making the local supply chain more resilient.

For example, the UAE launched the National In-Country Value (ICV) to enhance the resilience of the local value chain by maximizing the use of local goods and services, encouraging local manufacturing and creating job opportunities for UAE nationals in the private sector. Since the program's launch in 2018, \$64.5 billion (AED237 billion) has been driven back

into the UAE's economy and it has enabled 16,000 UAE nationals to be employed in National ICV-certified companies by the end of 2023.

2.4 Fairness of the UAE's Targets

In light of the urgency of the climate crisis, the Paris Agreement calls for Parties to progressively put forward their highest level of ambition through the NDC Cycle and informed by the outcome of the global Stocktake. It further acknowledges that in implementing the Agreement, equity and common but differentiated responsibilities, respective capabilities and national circumstances must be taken into consideration to ensure that when advancing climate ambition, broader sustainable development objectives – in particular for developing countries – are safeguarded.

The UAE, accounting for around 0.3% of global cumulative CO₂ emissions as of 2022, is a young nation that is still undergoing significant societal and economic transformation. With this development momentum, the UAE has been actively contributing to solving the climate crises through enhanced mitigation and adaptation policies and measures domestically and internationally. The UAE's emissions reduction target set out in this NDC, is based on the principles of CBDR-RC and equity, which are central to the UNFCCC and the Paris Agreement. As a Non-Annex 1 country with relatively lower historical contributions to global emissions and a small population, the UAE's target reflects its economic capacity and significant ambition. The UAE's emissions profile is intrinsically linked to the provision of essential services, such as energy for water desalination and cooling, which are vital for ensuring the well-being of the population in a high ambient temperature environment. These national circumstances present unique challenges that shape the UAE's approach to climate action. Historically, the UAE's GDP has been heavily reliant on oil, making the transition to a low-carbon economy more distinct. However, the UAE remains resolute in its commitment to reducing emissions to the greatest extent possible, balancing the need for sustainable development with economic diversification. This reflects the UAE's determination to contribute meaningfully to global climate efforts while safeguarding human development and essential services.

The UAE's emissions reduction from its 2019 baseline balances ambition with fairness, ensuring that its contributions are significant but achievable given its national circumstances. Equity in climate targets ensures that countries with higher capacities and lower historical emissions, like the UAE, have targets that reflect their ability to act without compromising their development needs. The UAE's assessment of fair share looks to emphasize all these key features of enhanced climate action through a balanced approach by: maximizing ambition in national efforts; protecting people, nature, lives and livelihoods and ensuring broader sustainable development objectives; contributing to the advancement of global efforts in other developing countries to enhance their climate action.

Delivering on these targets will push the limits of technical feasibility in some sectors. As a non-Annex 1 country with sustained growth, the UAE anticipates significant economic and population expansion by 2035, including growth in heavy-emitting sectors. It is expected that emissions already peaked during the period 2019 to 2022. Efforts to reduce emissions across government entities have been fast-tracked, while alternative means to help abate existing emissions has become integral. These include the deployment of carbon capture and low-carbon, hydrogen solutions, technologies and policies, which will be necessary to reduce emissions in heavy-emitting sectors.

Beyond driving emissions reductions within its own borders, the UAE supports the international community in deploying emissions reduction technologies and assisting countries affected by climate-related natural disasters. The UAE strongly advocates for and invests in climate solutions globally, contributing to Mitigation, Adaptation, response to Loss and Damage, and sustainable development.

2.4.1 Climate Aid

The UAE has provided over USD 2 billion in grants and concessional loans for renewable energy projects in developing countries in addition to providing the means and access to clean cooking. These projects range from displacing diesel to reduce energy costs, to energy access in rural and outer island communities, to the reconstruction of power systems post-climate-induced disasters. Notable examples include large-scale rural electrification projects in Egypt and Morocco, and utility-scale solar and wind

projects in Uzbekistan, Somalia, Yemen, the Maldives, Egypt, Jordan, Seychelles, and Mauritania. The UAE-Pacific Partnership Fund (UAE-PPF) and the UAE-Caribbean Renewable Energy Fund (UAE-CREF) are key initiatives, delivering renewable energy projects across Pacific and Caribbean Island nations, respectively. The UAE is also a major funder of the International Renewable Energy Agency (IRENA), which supports Member States in developing their renewable energy potential.

In its commitment to humanitarian relief, the UAE has integrated its efforts with the Loss and Damage (L&D) framework, aligning its strategy to provide comprehensive support for communities affected by climate change. This includes immediate relief and recovery efforts, resilience building, and financial assistance through the UAE Humanitarian Fund for Responding to Loss and Damage (FrLD). Notably, the UAE's humanitarian initiatives extend to various sectors such as health, agriculture, and environmental conservation. The Mangrove Alliance for Climate (MAC) focuses on protecting coastal communities from storm surges and rising sea levels through mangrove restoration, while the Agriculture Innovation Mission for Climate (AIM4C) promotes climate-smart agricultural practices to improve food security and resilience in vulnerable regions. Additionally, the Health and Climate Resilience Programme aims to build climate-resilient health systems, and the Overseas Development and Governance Cooperation (ODGC) provides technical and financial support to enhance governance frameworks for climate resilience and disaster response.

The UAE has a notable focus on supporting countries, particularly Least Developed Countries (LDCs) and Small Island Developing States (SIDS), that are experiencing the highest levels of vulnerability and the lowest levels of climate finance. At COP28, the UAE Presidency established the first-ever thematic day on Relief, Recovery, and Peace, mobilizing 93 governments and 43 entities to endorse the landmark Declaration on Climate, Relief, Recovery, and Peace (RRR). This declaration, accompanied by USD 1.2 billion in financial commitments, calls for action to narrow the climate action and finance gap in the most vulnerable and fragile areas. To ensure follow-up, an MOU was signed in June 2024 to set a coordination mechanism between the Anwar Gargash Diplomatic Academy (AGDA), the g7+ secretariat, and the think tank ODI. At the UN General Assembly (UNGA), the coordination mechanism and UNFCCC announced a UNFCCC Needs-based Finance Project to resolve access issues between climate finance providers and participating governments. Additionally, the UAE supports the UN's Climate Security Mechanism, including funding for a climate security advisor in Afghanistan.

SDR Contribution

In April 2022, the Executive Board of the International Monetary Fund (IMF) approved the establishment of the Resilience and Sustainability Trust (RST) to help countries build resilience to external shocks and ensure sustainable growth, contributing to their long-term balance of payments stability. RST was created to channel Special Drawing Rights (SDRs) contributed by countries with strong external positions to countries where the needs are the greatest, providing policy support and affordable longer-term financing to strengthen members' resilience and sustainability and thereby contributing to prospective balance of payments stability. The RST supports climate resilience in low- and middle-income economies and countries vulnerable to the impacts of climate change.

To date, the Fund has received total pledges amounting to SDR 31.9 billion from 21 members, including the UAE's contribution of USD \$200 million equivalent in SDRs from its allocation. The UAE's allocation of funds to the Resilience and Sustainability Trust is a testament of its commitment to advancing sustainable finance efforts and supporting countries most affected by climate change. Approximately three-quarters

of the IMF's country membership is eligible for RST financing, including low-income members as well as middle-income countries and small island developing states (SIDS). By end-February 2024, \$1.4 billion had been disbursed to nine countries, with a further \$3.4 billion to the seventeen countries so far scheduled for 2024.

Loss and Damage Fund

The UAE is very committed to addressing Loss and Damage. The UAE recognizes the severe impact of Loss and Damage on vulnerable nations, and is steadfast in supporting the global response to Loss and Damage. The UAE supports the Fund for Responding to Loss and Damage. During the second board meeting, the UAE supported the election of the Philippines as a host country of the board. Demonstrating action towards addressing Loss and Damage, the UAE has pledged USD 100 million towards the Loss and Damage Fund as part of a total of USD 792 million pledged by various countries. This fund is expected to take full operationalization by COP 29. Furthermore, the UAE is dedicated to helping vulnerable countries enhance their capacity to assess and manage loss and damage through risk management and resilience-building initiatives.



2.4.2 Climate Finance

The Global Climate Finance Centre is an initiative announced by the UAE in COP28, taking its location in Abu Dhabi Global Markets. This centre marks the cornerstone of setting the UAE as a Global Climate Finance Hub in attracting international investors, further enhancing the position of the UAE as a climate finance leader. It leverages the global climate finance agenda by making climate finance available, readily accessible, and within reach for the EMDCs. The Global Climate Finance Centre (GCFC) is supported by UAE banks and other UAE and international finance institutions. The centre functions as a one-stop shop for the financial industry to build climate business, align climate finance frameworks, activate de-risking

mechanisms to facilitate investment, support development of compliance and voluntary carbon markets, and build capacities in climate finance. The GCFC operates the “Innovate for Climate-Tech (I4C)” initiative, supported by over 50 industry stakeholders to accelerate climate-tech development, with backing from Masdar and Hub71. Through these efforts, the UAE is committed to transparency and measurable outcomes, demonstrated by the development of an Impact Framework.

The UAE launched ALTÉRRRA at COP28, committing USD 30 billion to catalyze the USD 250 billion target by 2030, making it the world’s largest private investment vehicle for climate action. ALTÉRRRA focuses on investments in industrial decarbonization, climate technologies, sustainable living, and the energy transition, aligning with the priorities of the COP28 Action Agenda. Its governance follows an innovative two-part structure: ALTÉRRRA Acceleration, a USD 25 billion fund aimed at steering large-scale capital toward a net-zero and climate-resilient economy, and ALTÉRRRA Transformation, a USD 5 billion fund providing risk mitigation capital to incentivize investments in the Global South. As part of this effort, USD 6.6 billion has already been deployed through key investment managers, including BlackRock, Brookfield, and TPG, with seven climate funds launched, such as the Brookfield Global Transition Fund II and the TPG Global South Initiative. Through these initiatives, ALTÉRRRA aims to make climate finance more accessible, affordable, and impactful, cementing its position as a key driver of global climate transition.

Renewable Energy Investment

The UAE has been a frontrunner in renewable energy investments, significantly contributing to global efforts in transitioning to sustainable energy sources. Masdar is one of the world’s fastest growing renewable energy companies and a green hydrogen leader, placing the UAE at the forefront of the energy transition. In alignment with the UAE’s vision as a global leader in sustainability and climate action, Masdar has developed projects in more than 40 countries across six continents. In particular, Masdar’s global projects are positioning Masdar as a pioneer in Wind and Solar Projects, and Offshore Wind. A few examples of Masdar’s extensive portfolio of wind and solar projects include Cibuk 1 in Serbia which has an installed capacity of 158MW of power, Noupoot in South Africa which has an installed capacity of 82.1MW of power, Zarafshan Wind Farm in Uzbekistan which is a utility-scale wind farm of 500MW of power, and the Samoa Wind Farm in the South Pacific Islands of Samoa which contribute to the savings of 1,000 tons of carbon dioxide annually. In addition, Masdar has an extensive investment portfolio in offshore wind farms, specifically in the UK and the North Sea. Examples of this portfolio include the Dudgeon Offshore Wind Farm in the UK which has an installed capacity of 402MW, and the Baltic Eagle Offshore Wind Farm in Germany which has a total power capacity of 476MW.



Beyond Masdar, the UAE and the US launched the Partnership for Accelerating Clean Energy (PACE), a joint initiative aimed at mobilizing \$100 billion to deploy 100 gigawatts (GW) of clean energy by 2035. This

partnership underscores the shared commitment of two major energy producers to driving a responsible and ambitious energy transition. In January 2023, the two countries announced the first wave of public-private investments into PACE, with an initial funding envelope of \$20 billion focused on developing 15 GW of clean and renewable energy. Further commercial investments are anticipated to help meet the 2035 target. The initiative will promote innovations in clean energy deployment and supply chains, carbon and methane management, nuclear energy, and the decarbonization of industrial and transport sectors.

In collaboration with international partners, the UAE continues to position itself at the forefront of leading international investments in renewable energy. The International Renewable Energy Agency (IRENA) has its headquarters hosted in Abu Dhabi, strengthening the global renewable energy advocacy. The African Green Investment Initiative has deployed USD 4.5 billion to install 15GW of clean power in Africa by 2030. This is being executed with a number of partners, including Masdar and Abu Dhabi Fund for Development. The AGII led the foundation of a broader Africa Green Industrialization Initiative launched at COP28 in collaboration with the Presidents of 14 African Countries. Africa Green Industrialization Initiative is a concept that brings together investments in clean energy with developing industrial capacity of African countries as a critical engine of economic growth and job creation. The initiative has established a Secretariat in 2024, with UAE as one of its founding members. Furthermore, other partnerships with global renewable energy leaders include collaborative projects with Siemens, EDF, and Engie. Furthermore, the UAE is a member of the UNSG Panel on Critical Energy Transition Minerals (CETMs), contributing to the development of guiding principles for sustainable mineral extraction and use. Overall, the UAE has investment commitments of over USD 16.8 billion in renewable energy ventures across 70 countries with a focus on developing nations.

3 Stakeholder Engagement in NDC Planning and Preparation Process

3.1 Whole-of-Government Approach

The development of the UAE Net Zero 2050 Strategic Initiative, including the 2035 targets outlined in the Third NDC, was a comprehensive, society-wide endeavour led by the Ministry of Climate Change and Environment (MOCCAEE). This inclusive process involved extensive collaboration across all levels of government—federal, emirate, and municipal—to ensure a cohesive and integrated approach to climate action. Over 50 bilateral meetings with public and private stakeholders, alongside more than 110 dedicated workshops, ensured that the roadmap to 2035 was informed by a diverse array of perspectives and expertise. This extensive consultation process, with around 800 feedback points, underscores the UAE's commitment to integrating sub-national input, aligning with the Coalition for High Ambition Multilevel Partnerships (CHAMP) process's emphasis on multi-level governance and stakeholder engagement.

A robust, data-driven methodology was employed to underpin the UAE's NDC, incorporating risk assessments, baseline studies, and specific targets to track and measure progress. This use of relevant data and evidence ensures that the NDC is both ambitious and achievable. National and sub-national governments benchmarked their climate actions against international analyses, such as those from UN-Habitat and the IPCC, ensuring that the UAE's climate strategies were informed by the latest global research and best practices. This integration of sub-national level data and evidence enhances the relevance and impact of the NDC.

Financial planning was a critical component of the UAE's NDC, with a clear plan for financing and implementing sub-national climate actions. The UAE identified a pipeline of investable projects and coordinated efforts between various levels of government and partners to align resources with the NDC's objectives. This structure facilitates the integration of climate policies and action plans across all sectors and levels of government, reflecting the governance arrangements that support sustained coordination and implementation.

Central to the UAE's strategy was the explicit inclusion of urban content within the NDC. By collaborating with municipalities and environmental authorities of different emirates, the UAE ensured that urban priorities were integrated into the sectoral objectives of the NDC. This approach addresses the unique challenges and opportunities of urban areas. Furthermore, the consensus-building process actively incorporated inputs and feedback from the Executive Councils of all seven emirates and their respective stakeholders, ensuring that the strategies reflected local needs and priorities.

3.2 Inclusion of Non-Government Stakeholder Groups

The UAE recognizes that effective climate action requires the collaboration of the private sector and civil society. Consequently, the government has actively engaged key private sector entities and local NGOs (Non-Governmental Organizations) in the NDC development process. The National Dialogue for Climate Ambition (NDCA) was launched as a platform to foster climate collaboration across all sectors of the economy, government and non-government stakeholders. They range from diverse sectors including manufacturing, waste, financial, transport, and energy. This platform facilitates monthly assemblies that bring together decision-makers from federal and local government entities, private sector representatives, and NGOs. These assemblies are dedicated to different sectors each month, providing a space to discuss sectoral requirements, priorities, and future directions to scale up decarbonization efforts.

Additionally, the UAE has extended its outreach to key social groups and vulnerable segments of society, including youth and women organizations, such as the Youth Councils and Gender Balance Council. This inclusive approach ensures that a diverse array of perspectives and expertise is incorporated into the NDC, enhancing its effectiveness and credibility. By involving non-government stakeholder groups in the planning and implementation phases, the UAE ensures that its climate strategies are comprehensive, equitable, and aligned with the needs and priorities of all segments of society.

3.3 Cabinet Endorsement

Following the stakeholder engagement process, UAE's NDC was endorsed by the highest executive power in the country. Moreover, this NDC is supported by the recently established Federal Decree-Law No. (11) of 2024, which provides a legal framework for the UAE's climate action, including setting emissions

reduction targets, enhancing adaptation measures, and ensuring compliance with the nation's international climate commitments.

4. Mitigation

4.1 National 2035 Target

The UAE is committed to achieving a 47% reduction in GHG emissions by 2035, compared to the 2019 levels of 196.3 MtCO₂e, thereby reducing the anticipated emissions to 103.5 MtCO₂e. This target has been established in line with a 1.5 pathway in an effort to showcase the UAE's best efforts, effectively contributing to global mitigation efforts to deliver deep, rapid and sustained reductions in greenhouse gas emissions by 2035. It is a firm commitment that reaffirms the UAE's dedication to ensuring that the goal of limiting global warming to 1.5°C remains within reach.

Building on the Third Update to the Second NDC published in 2023, the new 2035 NDC target continues with its enhanced target-setting methodology of committing to a base-year and fixed-level target, despite the UAE being categorized as a non-Annex I country. This approach follows the call under the outcome of the first GST for Parties to come forward with ambitious, economy-wide emission reduction targets in the light of different national circumstances, in accordance with the provisions of the Paris Agreement.

In this spirit, as the UAE continues to build its capacity, the country's 2019 baseline has been updated to include F-gases and a more robust inventory compared to the previous NDC publication. This update ensures alignment with the Enhanced Transparency Framework (ETF) for the UAE's second Biennial Transparency Report (BTR) submission in 2026. This comprehensive approach underscores the UAE's commitment to maintaining rigorous standards in tracking and reporting its progress towards its climate goals.

4.1.1 Transparent and Quantifiable Reference Information

The updated inventory leverages the IPCC inventory software tool v2.9, which incorporates fewer assumptions and applies equations with greater rigor. This ensures a more precise and accurate representation of emissions. Furthermore, the UAE's methodology now includes a detailed treatment of land use, ensuring that all relevant emissions sources are accounted for comprehensively. The output is formatted in alignment with the IPCC guidelines, which informs the data collection process and ensures a more robust outcome in the inventory.

The UAE's Third NDC sets economy-wide targets that cover all domestic sectors, including land use, land use changes, and forestry. These targets encompass all national GHG emissions, including Carbon Dioxide (CO₂), Methane (CH₄), Nitrous Oxide (N₂O), and now Fluorinated Gases (F-gases). Following the UAE's ratification of the Kigali Amendment to the Montreal Protocol, the country has committed to addressing F-gases effectively. The Measurement, Reporting, and Verification (MRV) system has been developed to include F-gases, ensuring thorough monitoring and reporting of these emissions.

While domestic aviation and shipping are within the scope of this Third NDC, emissions from international aviation and international shipping are not included. Nonetheless, relevant local entities contribute to emissions reduction efforts in these sectors by promoting the production and use of sustainable aviation fuels (SAFs) and exploring green shipping corridors. These corridors are special maritime routes used to test and showcase the feasibility of low-emissions shipping fuels and technologies. The UAE supports decarbonization targets set by the International Civil Aviation Organization (ICAO) and the International Maritime Organization (IMO) and plans to increase the production of e-kerosene (a type of sustainable aviation fuel) and green or blue ammonia or methanol (for shipping), with significant ramp-up post-2030. Further details are provided in the UAE's Long-Term Strategy (LTS).

It must be noted that the monitoring GHG emissions is complimented through the National Accreditation Department at the Ministry of Industry and Advanced Technology (MoiAT). It is integral to the UAE's ongoing journey toward achieving global climate goals. Through accreditation, the department ensures that industries, organizations, and environmental bodies comply with internationally recognized standards, enhancing the credibility of climate action efforts. This includes rigorous measurement, reporting, and verification of greenhouse gas emissions, energy efficiency, and sustainable practices, which are key to tracking the UAE's progress in meeting its Nationally Determined Contributions.

The national accreditation bodies (ENAS, EIAC) to be ready by 2030 to accommodate all the requirements from the nationals' projects initiatives to ensure the competence of CAB's issuing the related certificates and can be included in the list of mandated accreditation within UAE.

4.2 Sectoral Pathways

The sectoral distribution of emissions adheres to the UAE's Net Zero by 2050 Strategic Initiative. Emissions from fossil fuels used for power and water generation are listed under the power and water sector. However, to encourage energy efficiency and informed fuel-switching decisions, these emissions are also attributed to the sectors that consume the energy. For instance, sectors such as industrial, transport, waste, buildings, and agriculture include indirect emissions from power and cogeneration plants. This approach ensures that entities focused on specific sectors are accountable, facilitating clear measurement of progress. The sectoral breakdown, following IPCC guidelines, is detailed below in the ICTU table (Information to Facilitate Clarity, Transparency, and Understanding) to facilitate transcription and mapping.

Sector*	2019 Base Year in MtCO ₂ e	Target in MtCO ₂ e by 2035	Reduction by 2035
Industry	92.6	68.0	27%
Transport	30.2	24.2	20%
Waste	4.8	3.0	37%
Buildings	71.0	15.0	79%
Agriculture	4.2	2.6	39%
Total	196.3 (includes negative emissions)**	103.5 (includes negative emission)**	Total reduction: 47%

*Individual sector emissions include emissions from power and water usage, and to prevent double counting, power and water related emissions is detailed in section 4.2.1: power and water.

** The emissions detailed in the table above represent all sectors with a net positive value in released emissions. However, the UAE inventory also factors in a reduction of -6.6 MtCO₂e in 2019 and -9.3 MtCO₂e in 2035, which when included will yield the total values of 196.3 MtCO₂e in 2019 and 103.5 MtCO₂e in 2035. These reduction values correspond to carbon sequestration activities through land use types, mangrove plantation programmes and direct air capture. Within the IPCC framework, portions of these negative emissions are attributed across sectors, with some assigned to AFOLU and others to IPPU. These allocations align with sectoral reporting practices, contributing to an integrated approach that supports agriculture, forestry, land use, and industrial processes. This structured alignment ensures that the overall impact of negative emissions is captured within the broader emissions accounting system. Further information can be found in chapter 4.2.7: Negative Emissions.

Under the IPCC sectoral distribution, the above table is transcribed and mapped accordingly below for comprehension:

IPCC Sectors	2019 Emissions (MTCO2e)	2035 Emissions (MTCO2e)
Energy	171.4	87.6
IPPU	24.4	18.5
AFOLU	-4.3	-5.6
Waste	4.8	3.0
Total	196.3	103.5

4.2.1 Power and Water

Sectoral Base Year and 2035 Target

In 2019, the UAE's power and water sector were responsible for emitting up to 78.9 MtCO₂e of greenhouse gases. These emissions included those from grid-connected power and co-generation plants, such as gas power plants and gas-fired co-generation. The UAE seeks to explore pathways towards achieving more than 50% reduction in emissions from the power and water sector by 2035 relative to 2019 levels. This endeavour will be pursued in light of, and subject to, evolving circumstances such as energy security considerations, supply chain developments, land availability, technology readiness, market prices, economic conditions, and regional dynamics. While efforts will be explored for a grid emissions coefficient potential outcome that is more efficient than 0.243 tCO₂e/MWh, these goals are aspirational and may be revisited as new challenges, opportunities, or limitations emerge.

In alignment with the UAE consensus as part the UAE's efforts to transition away from fossil fuels, the target will be explored through a diversified approach that includes civil nuclear energy, significant increases in solar capacity, further expansion in additional solar resources, and the operationalization and enhancement of waste-to-energy capacity. The pursuit of these targets will remain subject to evolving opportunities, challenges, and limitations. Feasibility studies will be conducted to assess and adapt plans as circumstances change, ensuring that the most viable, just, and sustainable pathways are pursued over time.

Existing Federal Policy Levers and Initiatives

The UAE has implemented multiple policy levers to support and accelerate the decarbonization of its power sector. In July 2023, the UAE had updated its National Energy Strategy, setting ambitious targets to expand renewable energy capacity and increase the share of clean energy in the nation's energy mix. The strategy aims to triple the country's renewable power generation capacity and increase the proportion of clean energy to 30% by 2030. A key objective of the updated strategy is to increase renewable energy capacity to 19.8 GW by 2030, up from the current 3.7 GW. The strategy was revised to reflect greater climate ambitions removing the 12% target of clean coal from the energy mix and an updated power and water sector pathway. The Energy Strategy is currently being revised to consider the enhanced ambition.

Additionally, the UAE's National Water and Energy Demand Side Management Programme 2050 (UAE DSM Programme) is a critical initiative aimed at reducing resource consumption. The Programme targets a 42%-45% reduction in energy use and a 51% reduction in water use compared to business-as-usual scenarios by 2050. The UAE Water Security Strategy 2036 also aims for a 21% reduction in total water demand. Key sectors such as the built environment, industry, and agriculture are expected to contribute significantly to these savings, with the built environment alone targeting a reduction from 4,315 million cubic meters to 2,393 million cubic meters in water use by 2050.

The DSM Programme anticipates in saving 40% of 128.8 million tons of oil equivalent (Mtoe) in energy consumed today to business as usual by 2050 to reach 76.1 mToe. Advanced monitoring systems like the National DSM Portal and smart awareness platforms are integrated to track key performance indicators and ensure the achievement of these ambitious goals.

Similarly, the Ministry of Industry and Advanced Technology continues to develop standards within its Water and Energy Efficiency program. This star-rating program is expanded and updated annually to include standards for more electrical appliances or update the energy/water consumption efficiency criteria on existing standards. It currently covers a number of products including high-capacity and low-capacity air conditioners, elevators, and water pumps alongside household appliances. This is also complimented with the UAE Control scheme for monitoring Renewable Energy Products (Solar), a scheme to regulate the use of solar power products through harmonizing with international standards

These policies and strategies are currently in the process of being updated to reflect the enhanced targets set forth in the Third NDC, ensuring that the UAE remains on track to keep the 1.5°C goal within reach. These updates aim to incorporate more ambitious targets and strategies, aligning with the UAE's strengthened commitment to reducing emissions and achieving Net Zero by 2050.

Existing Emirate-Level Policy Levers and Initiatives

Numerous policies at the emirate level also set targets for renewable energy and demand-side management. These include Abu Dhabi's Clean Energy Strategic Target 2035 for Electricity Production and its Policy for Energy Production from Waste, Dubai's Clean Energy Strategy 2050 , Dubai's Net Zero Strategy 2050, Dubai's Demand Side Management Strategy 2050, Dubai's Carbon Abatement Strategy 2030, and Ras Al Khaimah's Energy Efficiency and Renewable Energy Strategy 2040. Relevant policies are expected to be reviewed and potentially revised to reflect the new 2035 targets.

Since the publication of the Third Update to the Second NDC in July 2023, numerous emirate-level policies have been revised, with significant updates and announcements made. In particular, the Dubai Supreme

Council of Energy has revised the Dubai Demand Side Management Strategy 2050. The update sets ambitious targets to achieve a 30% reduction in energy and water demand by 2030, escalating to 50% by 2050, compared to business-as-usual scenarios. The updated DSM Strategy includes 12 comprehensive programmes aimed at enhancing efficiency across multiple sectors. These programmes range from Net Zero Ready New Buildings and Building Retrofits to Efficient Mobility and Smart Charging. Compared to the previous DSM Strategy 2030, which featured 11 programmes and targeted a 30% reduction in energy and water demand by 2030, the DSM Strategy 2050 expands its scope and ambition, reflecting greater climate and efficiency goals. The updated strategy aims to achieve annual savings of 27.2 TWh electricity and 106.9 billion imperial gallons of water by 2030; and 86.8 TWh electricity and 383.2 billion imperial gallons of water by 2050. The updated strategy enhances ambitions by setting higher targets integrating new areas of focus, such as distributed energy and recycled water use efficiency.

Additionally, Dubai through the Dubai Electricity and Water Authority, has inaugurated the world's largest concentrated solar power (CSP) project within the 950MW fourth phase of the Mohammed bin Rashid Al Maktoum Solar Park. This phase comprises three hybrid technologies: a 600MW parabolic basin complex, a 100MW CSP tower, and 250MW of photovoltaic solar panels. The fourth phase has a thermal energy storage capacity of 5.9 gigawatt-hours, significantly enhancing Dubai's renewable energy capacity and its ability to provide clean energy around the clock. Moreover, the Hatta hydroelectric power station, the first of its kind in the GCC, will generate 250MW of electricity using water from the Hatta Dam and a new upper reservoir in the mountains. It will store 1,500 MWh of energy, with a lifespan of 80 years, and achieve up to 78.9% efficiency. During off-peak hours, turbines will pump water to the upper reservoir, and when needed, the flow back through a 1.2 km underground canal will generate electricity within 90 seconds.

In parallel, Abu Dhabi has articulated a clear strategy for achieving net-zero emissions through the Abu Dhabi Energy Outlook 2050, launched prior to COP28. This framework delineates various scenarios aimed at expediting decarbonization efforts across the transport, building, industry, and power sectors. These scenarios include maintaining current policies, bridging the gap to net zero by 2050, and fully embracing technological advancements. The outlook aligns with the COP28 Net-Zero Transition Charter, which commits all sectors of the economy to reducing carbon emissions and establishing credible net-zero transition plans.

The Abu Dhabi Department of Energy has implemented several critical policies to support this strategy. These policies include the Clean Energy Targets 2035, Regulatory Policy for Clean Energy Certificates, Policy for Energy Production from Waste, Regulatory Policy for Electric Vehicle Charging Infrastructure, District Cooling, and the Recycled Water Policy. Abu Dhabi currently integrates 40% clean (renewable and nuclear) energy into its energy mix, with a target to increase this to 60% by 2035, and aims to achieve net zero by 2050.

Moreover, Abu Dhabi has launched a new regulatory policy for low-carbon water certificates as part of its responsibility to regulate the energy sector in Abu Dhabi, ensuring sustainability in accordance with the best international practices and standards.

The new policy supports the goals of the UAE's Net Zero strategy and aims to issue low-carbon water certificates to reduce the impact of carbon emissions from the water desalination process in Abu Dhabi.

4.2.2 Industry

Sectoral Base Year and 2035 Target

The UAE's industrial sector emissions are from captive power production by major industrial entities (such as off-grid electricity generation by oil, gas, and aluminium producers for their own use). By 2035, emissions from the industrial sector are projected to decrease by 27% to 68.0 compared to the 2019 baseline level.

This will be achieved through a combination of initiatives across various sectors. In the iron and steel sector, strategies will include the use of hydrogen, low-carbon electricity, CCUS), and efficiency improvements, as well as an increased reliance on scrap metal. Similarly, the cement and clinker sector will explore fuel switching, alternative heat sources, and clean electricity, while utilizing clinker substitution, efficiency improvements, and CCUS to drive emissions reductions. In the aluminium sector, efforts will focus on increasing production efficiency and optimizing energy consumption through the adoption of alternative heat sources and improved process efficiency. The transition will also leverage low-carbon electricity to reduce emissions, alongside expanding the use of secondary metal capacity and scrap aluminium. Considering the industry's growth and its interdependency on energy, the aluminium industry in the UAE will continue to report emissions based on intensity until 2035. This reporting is in line with international standards, in collaboration with SBTi and ASI, both of which are aiming for emission reductions based on a 1.5°C scenario.

The oil and gas sector will incorporate carbon capture, utilization, and storage technology to mitigate emissions, integrating substantial amounts of CO₂ capture into their operations. ADNOC has allocated \$23 billion (AED84.4 billion) to accelerate investments to scale up practical and commercially viable initiatives decarbonization and low-carbon solutions. The company has set an ambition to achieve net zero by 2045 and reduce their carbon intensity by 25% by 2030, through greater energy efficiency, zero routine flaring, reductions in methane emissions, the electrification of our onshore and offshore operations using nuclear and solar energy sources and applying carbon capture and storage technologies.

Existing Federal Policy Levers and Initiatives

The UAE has implemented multiple policy levers to reduce industrial emissions. The UAE DSM programme aims to improve the industrial sector's energy efficiency by 33% by 2050, targeting the 6 main industrial sectors in the UAE that contribute mostly to high energy consumption. These initiatives include ISO 50001 certification, submission of DSM improvement plans every three years, and annual reporting of energy demand and emissions to the relevant government authority. The Industrial Decarbonization Roadmap, launched at COP28 in line with Operation 300bn, aims to support the UAE's Net Zero by 2050 Strategy. This serves as a cornerstone among several initiatives launched at COP28 to address industrial emissions, marking a significant step towards achieving the UAE's ambitious climate goals. The roadmap identified several recommendations and enablers to support the implementation of decarbonization measures, with the UAE utilizing tools like procurement and standards.

Identifying sustainable manufacturing as a priority sector, the "UAE Circular Economy Policy (2021–2031)" supports the sector in embracing the principles of a closed-loop economy. Additionally, the Cabinet has

approved a new policy on scrap export to enhance material circularity within industrial production processes.

The Ministry of Industry & Advanced Technology launched its Industrial Technology Transformation Index (ITTI) to measure Industry 4.0 and sustainability readiness in the manufacturing sector. The ITTI is the first of its kind to integrate 4IR fundamentals with sustainability in one comprehensive framework. The ITTI promotes sustainability and efficient resource management, therefore out of the 20 ITTI dimensions, four dimensions relate directly to sustainability. These are D17. Sustainability Strategy and Governance, D18. Material Circularity, D19. Water and Wastewater Management, D20. Emissions Management.

Similarly, The National In-Country Value (ICV) Programme introduced “Green ICV” to encourage sustainable practices through various supply chains, rewarding companies that have scored within the sustainability dimensions of the ITTI assessment or have obtained ISO certifications like ISO 14001, ISO 14046, and ISO 50001, including other elements. The Industrial Transition Accelerator (ITA), funded by the UAE and Bloomberg Philanthropies, aims to progress deep decarbonization projects globally, advancing workstreams such as the geography-focused Projects Support Programme and the global-focused Conditions for Investment.

Furthermore, the UAE signed a statement of intent towards the Green Public Procurement Pledge under the Industrial Deep Decarbonisation Initiative (IDDI). This initiative reflects a collective effort among participating governments to boost demand for low and near-zero-emission steel, cement, and concrete through public procurement. MoIAT has been working on the inclusion of Environmental Product Declarations (EPD) requirements in building and construction regulations, specifically for steel, cement, and glass, which can support the establishment of a baseline of the carbon intensity for the products within the UAE and inform future decisions. The Cement & Concrete Breakthrough Initiative, co-chaired by the UAE and the Government of Canada, aims to make near-zero emission cement the preferred choice in global markets, with efficient use and near-zero emission cement production established and growing in every region of the world by 2030 by strengthening international collaboration in the area.

Additionally, MoIAT has published Standard number UAE.S 5051:2023, which has been approved as a technical regulation by UAE Cabinet Resolution No. (136/2023). It focuses on enhancing the energy efficiency of electric motors used in the industry, addressing their significant role in energy consumption—approximately 65% of industrial energy use. The standard mandates compliance with the IE3 energy efficiency level, which is expected to achieve an average energy saving of 8%. This regulation aims to promote sustainability and reduce energy costs in industrial operations.

Existing Emirate-Level Policy Levers and Initiatives

The federal UAE DSM programme is complemented by emirate-level strategies such as Dubai’s Demand Side Management 2050 Strategy, Abu Dhabi’s Demand Side Management and Energy Rationalization Strategy 2030, and Ras Al Khaimah’s Energy Efficiency and Renewable Energy Strategy 2040. These strategies enhance the overall energy efficiency of the industrial sector. Abu Dhabi has also launched the Abu Dhabi Industrial Strategy, aiming to increase production efficiency and advance the transition to a circular economy. As part of this strategy, Abu Dhabi is developing a regulatory framework for the circular economy. Additionally, Abu Dhabi Supreme Council for Economic and Financial Affairs has approved an emirate-level policy on low-carbon hydrogen providing a framework for a low-carbon hydrogen economy.

Several emirate-level policies and initiatives further support the decarbonization of the industrial sector. The Environment Agency of Abu Dhabi (EAD) launched the Green Industries Label, a voluntary environmental performance assessment programme recognizing facilities that implement eco-friendly operations.

Ras Al Khaimah launched the Industrial Energy Audit Initiative as part of the energy management program of the emirate. Several large industrial companies are engaged by Ras Al Khaimah Municipality through voluntary agreements, whereby subsidised energy audits are offered in exchange for an obligation to report on improvement plans. By the end of 2023, seven industries have completed energy audits in their facilities, representing nearly 50% of the industrial energy consumption of the emirate.

Company Initiatives

Several companies in the UAE are actively participating in industrial decarbonization efforts. Arabian Gulf Steel Industries LLC (AGSI) has been championing the decarbonization efforts through its sustainable steelmaking of steel products that are produced from 100% locally sourced steel raw material (scrap) and electric Induction Furnace powered by 100% electricity. The company received the Greenhouse Gas Verification statement certifying its carbon emissions at 0.2 tCO₂e/tcs for 2022 and 0.14tCO₂e/tcs for 2023, audited by DNV. This 30% improvement in carbon emissions reductions shows the possibilities of decarbonizing the steelmaking processes. AGSI has also become the first steel producer to achieve Carbon Neutrality for 2023 with commitment to maintain for subsequent years, in line with the international standard PAS2060:2014, certified by DNV.

Moreover, EMSTEEL has partnered with Masdar to develop a green hydrogen pilot project to produce “green steel.” Currently in its commissioning phase, the project aims to showcase the use of green hydrogen instead of natural gas in steelmaking. CarbonCure Technologies, a pioneer in carbon utilization technologies for the concrete industry, is expanding its technology deployment in the UAE, working with multiple concrete plants in Abu Dhabi and Dubai. This collaboration includes local concrete industry partners such as Emirates Beton Ready Mix and Tremix, as well as industrial gas supplier Gulf Cryo.

ADNOC is partnering with technology providers and industry peers to explore and invest in the transformative climate technologies of the future that will be critical to achieving net zero. These include innovative carbon capture and storage technologies, geothermal, hydrogen, renewables and sustainable fuels that hold the potential to significantly reduce emissions of hard-to-abate sectors.

ADNOC is also decarbonizing its offshore operations through the construction of a first-of-its-kind sub-sea transmission network, that will replace existing gas turbine generators with imported grid power from nuclear and solar sources. This \$3.8 billion (AED14 billion) investment is expected to reduce offshore oil & gas carbon footprint by up to 50% by 2026.

In 2023, the company has doubled its carbon capture capacity commitment to 10mtpa by 2030. Additionally, the company has taken final investment decision on two major CCUS projects with a combined carbon capture capacity of 2.9mtpa.

ADNOC commenced a world-first pilot to permanently store CO₂ in a carbonate saline aquifer in Abu Dhabi’s onshore geological formations. ADNOC is also piloting CCS technology that permanently mineralizes CO₂ within rock formations found in the Emirate of Fujairah. Success in both CO₂

sequestration and mineralization pilots may pave the way to large-scale carbon capture and storage across the region.

Emirates Global Aluminium has established an innovation department to develop climate technology. This technology will help the company to decarbonize its main processes across the entire value chain. One of the initiatives, known as Project Square, aims to build a larger interconnector to import green energy instead of operating EGA-owned gas turbines. Another major initiative is to produce secondary metal from EGA's recycling plant by 2029, with a capacity of more than 170,000 tonnes. The company has allocated a yearly budget to explore various decarbonization solutions in collaboration with many local and international entities.

Expansion Plans for Industry

The UAE's National Strategy for Industry & Advanced Technology, known as "Operation 300Bn," launched in 2021, is designed to significantly expand the industrial sector's contribution to the national economy. The strategy aims to more than double the sector's non-oil GDP contribution, reaching AED 300 billion by 2031. This ambitious expansion plan is part of the UAE's broader effort to diversify its economy.

Since the inception of Operation 300Bn, the UAE has concluded 14 Comprehensive Economic Partnership Agreements as of July 2024, broadening the global market access for UAE industrial products. The expanding demand and market access underscore the UAE's strategic vision of positioning itself as a global industrial hub.

Despite the planned industrial expansion, the UAE remains firmly committed to decarbonization. The increasing demand and expansion of the industry pose significant challenges to its decarbonization goals. However, proactive measures are being implemented to mitigate these impacts. For instance, Emirates Global Aluminium plans to increase its production by 20% by 2031 from 2024 levels while aligning with a science-based decarbonization methodology in support of the 1.5°C climate goal. This demonstrates the UAE's dedication to balancing industrial growth with sustainable practices and reducing greenhouse gas emissions.

The UAE is exploring opportunities in low-carbon hydrogen and ammonia to leverage the UAE's substantial gas reserves, world-class infrastructure, carbon capture and storage expansions, and global partnerships. ADNOC has already delivered eight cargos of low-carbon ammonia to customers in Europe and Asia. These initial cargos are a critical step to test new applications for ammonia, demonstrating growing interest in low-carbon ammonia, a fuel that could help end users reduce operational emissions in traditionally hard-to-abate industries.

Furthermore, ADNOC has proceeded with the engineering design stage for a world-scale CCS hub, low carbon hydrogen and ammonia production facility, with the capacity to produce 1 mtpa of low-carbon ammonia.

4.2.3 Transport

Sectoral Base Year and 2035 Target

the UAE's transport sector emissions primarily come from gasoline and diesel combustion in internal combustion engines (ICE). Additional emissions came from energy consumption associated with



transportation, including the power needed for electric vehicles and metro operations. Key sources of emissions within this sector include private cars, buses, heavy-duty trucks, and construction machinery like cranes and excavators. Despite expectations of a significant increase in population and a substantial rise in nominal GDP by 2035, the UAE plans to reduce emissions from the transport sector by 20% by 2035, compared to 2019 levels, reaching 24.2 MtCO₂e. This target reflects the country's commitment to reducing its environmental impact even as it undergoes significant economic and demographic growth.

This reduction will be met by significantly increasing the adoption of electric vehicles, with a focus on accelerating this transition earlier than initially planned. This includes a mix of battery electric, plug-in hybrid, and hybrid vehicles, particularly emphasizing electric options for passenger vehicles. Additionally, efforts will be made to improve the overall energy efficiency of all vehicles over time. Greater pedestrianization and the expanded use of public transport will also further mitigate emissions.

Existing Federal Policy Levers and Initiatives

The UAE is committed to decarbonizing its transport sector through a comprehensive set of federal policy measures. These include enhancing infrastructure, regulatory reforms, and promoting sustainable and smart mobility. As part of this commitment, the UAE is developing a national policy for electric vehicles (EV), which serves as a framework to align standards for EV charging infrastructure, enhance UAE competitiveness, and reduce energy consumption in the transportation sector. The main targets of this policy include unifying infrastructure standards for EV charging stations across the UAE, supporting the national roadmap for EV charging stations, and coordinating with federal authorities on the registration of electric vehicles. Additionally, the policy aims to develop the EV market, with a goal of increasing the share of electric vehicles to 50% of total car sales by 2050, and contributing to a 40% reduction in energy consumption in the transportation sector by 2050. The policy also supports the circular economy by establishing a unified charging fee for public stations and developing a legislative and technical framework for recycling EV batteries. The UAE National Smart Mobility Strategy further aims to position the UAE as a leader in intermodal mobility by developing compatible infrastructure, integrated mobility systems, and adaptive policies and regulations.

In 2015, the UAE implemented fuel price reforms by removing subsidies and linking gasoline and diesel prices to international market prices. A new fuel standard rule requires diesel to comply with 10 ppm Sulphur content and Euro 5 standards, while new motor vehicles must meet Euro 4 performance standards, with a gradual move to Euro 5/6 planned.

At COP28, UAE Alliance for Climate Action (UACA), a non-state actor programme for UAE coordinated and led by Emirates Nature-WWF, launched the Road 2.0 initiative in support of UAE's Net Zero by 2050 Strategic initiative, marking a crucial step towards reducing transport emissions in the UAE by building a more developed ecosystem for transition to Zero Emission Vehicles. The initiative is initially focusing on the deployment of commercial Battery Electric Vehicles (BEVs) into business operations complemented by broader opportunities to increase operational efficiencies of commercial transport to reduce emissions. The Road 2.0 Initiative is working with the full UAE transport ecosystem to reduce emissions from the sector, by integrating Zero Emission Vehicles (ZEVs) within commercial fleets over time and sending a market signal that can incentivize faster uptake of new technologies.

Additionally, the UAE has developed a national policy for biofuel, which serves as a framework to enhance UAE biofuel competitiveness, and reduce emissions in the transportation sector. The main targets of this policy include Determination of approved standards for biofuels, Achieving sound management of biofuel production and circulation operations in the country, and Optimal utilization of industrial waste. Also, the policy aims to shift a part of diesel consumption on land transportation sector into biodiesel, by introducing (B7) which is a mixture of 7% of biodiesel with 93% conventional diesel on 2030 and (B20) which is a mixture 20% of biodiesel with 80% conventional diesel on 2050. This target reflects the country's commitment to support the circular economy by recycling Industrial waste and reducing its environmental impact.

Moreover, Cabinet Resolution (50) for 2024 regarding the Technical Requirements for Electric Vehicles in the UAE, prepares the regulatory infrastructure in the UAE to safely operate electrical vehicles through defining the technical requirements for all vehicles with a speed of over 25 km/hr. Similarly, there is the UAE Regulations Scheme for Hydrogen and Fuel Cell vehicles (2021) which defines the technical requirements to ensure the readiness of the quality infrastructure for the safe and efficient use of hydrogen and fuel cell vehicles.

Existing Emirate-Level Policy Levers and Initiatives

To reduce private vehicle usage, emirate-level governments promote sustainable urban growth focused on mixed-use developments and active transport (e.g., cycling and walking). This is outlined in urban master planning strategies such as the Dubai 2040 Urban Master Plan, Abu Dhabi's Surface Transport Masterplan, and Ras Al Khaimah's sustainable community guidelines.

Abu Dhabi actively supports sustainable transport through the Integrated Transport Centre (ITC) of the Department of Municipalities and Transport (DMT). The ITC focuses on establishing infrastructure for smart and sustainable transport solutions, including electric and hybrid vehicles, smart electric buses, bicycles, and scooters. The strategy emphasizes the use of alternative clean energy sources in public transport, aiming to modernize the public bus fleet with eco-friendly buses and develop hydrogen-powered bus infrastructure. Additionally, 80% of Abu Dhabi's taxi fleet consists of eco-friendly vehicles, including hybrid, electric, and natural gas-powered taxis. The ITC is also advancing smart mobility projects with self-driving vehicles and electric charging stations to enhance sustainable transport options.

Dubai is implementing the Dubai Green Mobility Strategy 2030 through the Dubai Supreme Council of Energy (DSCE). The strategy aims to increase the number of electric and hybrid vehicles in the Dubai Roads and Transport Authority (RTA) fleet, aligning with national plans to reduce carbon emissions from public transport, including buses, taxis, and the metro. A roadmap with annual programmes and initiatives has

been developed to transform all public transport means to be carbon-free by 2050. In the past five years, Dubai has seen a significant increase in electric and hybrid vehicles within the RTA fleet, reflecting the city's commitment to eco-friendly transportation. DEWA PJSC plans to expand the number of EV charging stations in the Emirate to over 1,000 by 2025. By the end of 2023, DEWA PJSC had successfully installed more than 700 charging points across Dubai, attracting 13,959 registered customers in the EV Green Charger programme, in addition to the daily “Guest Mode” feature users. These users collectively covered approximately 117 million kilometres through electric vehicle travel. Simultaneously, the initiative contributed to the growth of EVs in Dubai, reaching over 25,700 by end of Q4 2023

Ras Al Khaimah and Sharjah are also making strides in sustainable transport. Ras Al Khaimah has launched new generation solar-powered bus shelters, using locally sourced materials, as part of the RAKTA plan 2023-2030. These shelters aim to encourage public transportation use and promote sustainable mobility. To accelerate the uptake of BEVs in the private sector, Ras Al Khaimah Insurance is offering reduced rates for BEVs. Sharjah has integrated 83% of hybrid and eco-friendly vehicles into its taxi fleet, targeting 100% by 2027.

4.2.4 Waste

Sectoral Base Year and 2035 Target

A majority of the waste emissions originate from landfills due to the decomposition of organic waste. The remaining emissions were due to electricity consumption for recycling plants and wastewater treatment processes. The UAE has set a target to reduce these emissions by focusing on landfill diversion, aiming for 50% by 2025 and 80% diversion rate by 2031 through increased recycling and waste-to-energy initiatives. By 2035, emissions from the waste sector are expected to reduce by 37%, at 3 MtCO₂e.

In the short term, recycling and waste-to-energy initiatives may lead to higher CO₂ emissions, as recycling requires additional electricity and waste-to-energy processes release trapped gases. However, waste-to-energy generates power, thereby reducing emissions in the power sector. It also converts landfill methane emissions, which have a global warming potential 80 times greater than CO₂ over a 20-year timescale, into CO₂. This conversion significantly reduces long-term emissions from the waste sector, aligning with the UAE's broader emission reduction goals.

The target will be met by implementing comprehensive national regulations to manage recycling facilities and recyclable waste, encouraging a shift towards a circular economy and promoting proper waste handling across various categories such as electronic waste, plastic, tires, used cooking oil, and aluminium dross. Additionally, there will be measures to set minimum fees for landfill disposal to limit random waste disposal. The expansion of waste-to-energy projects will also be crucial, converting significant amounts of municipal solid waste into electricity, thereby reducing landfill use and supporting renewable energy production across the country.

Existing Federal Policy Levers and Initiatives

The UAE has introduced several federal initiatives to tackle waste management effectively. The Ministry of Climate Change and Environment launched the National Agenda for Integrated Waste Management

(2023-2026), setting ambitious targets to reduce waste generation and improve recycling by 2031. This agenda aims to decrease municipal waste per capita from 1.2 kg/capita/day in 2023 to 1 kg/capita/day by 2031.

To ensure comprehensive waste management, Federal Law No. 12 of 2018 and its executive regulation No. 39 of 2021 were enacted to standardize waste disposal practices across the UAE. These regulations cover the entire waste management process from production to disposal, including free zones, ensuring that the best available practices and technologies are applied to protect the environment and human health.

Supporting the recycling industry, Cabinet Resolution No. 116 of 2023 regulates facilities involved in the integrated waste management of recyclable materials. This legislation aims to streamline the circulation of raw materials and support their conversion into products that enhance the national economy. Additionally, Ministerial Decree No. 98 of 2019 mandates that cement plants using coal must source at least 10% of their energy needs from alternative fuels produced from municipal solid waste, while Ministerial Decree No. 21 of 2019 promotes the use of recycled materials from construction and demolition waste in infrastructure projects.

In 2023, the UAE Cabinet also adopted the UAE Circular Economy Agenda 2031, which provides a comprehensive framework for implementing circular economy principles. The agenda outlines the development of 22 policies, with the policy committee, the first permanent committee of the UAE Circular Economy Council, tasked with supporting national efforts. This includes studying and assessing challenges to the circular economy, proposing appropriate policies, evaluating initiatives, and recommending projects that accelerate the shift towards a circular economy model. This is complimented with MoIAT permitting the use of recycled PET in water bottles and food contact materials based on approved safety and quality requirements

Further enhancing community involvement, the Emirates Manjam initiative encourages waste sorting at the source, establishing collection centres across residential neighbourhoods and strategic locations nationwide. Ne'ma, a collaboration between the Ministry and the Emirates Foundation, addresses food loss and waste throughout the entire value chain, promoting responsible consumption and reducing waste from production to consumption.

Additionally, the Waste to Zero initiative, launched during COP28, focuses on reducing emissions from waste management activities. This initiative aims to improve recycling rates, reduce food loss and waste, attract investment in waste infrastructure, create new jobs, and decrease global reliance on natural resources, marking a significant step towards comprehensive waste management and sustainability.

Existing Emirate-Level Policy Levers and Initiatives

On an emirate level, tailored waste management strategies complement federal initiatives. Dubai, for instance, has implemented the Dubai Integrated Waste Management Masterplan 2021-2041 and the Dubai Waste Minimization Strategy 2020-2041. These strategies align with the UAE's broader waste management goals and focus on significant landfill diversion through increased recycling and waste-to-energy projects. Dubai's waste-to-energy facility, operational since 2023, processes 1.9 million tons of waste annually, generating approximately 200 megawatts of electricity.

In Abu Dhabi, the Integrated Waste Management Masterplan and the Policy for Energy Production from Waste drive sustainable waste management. The emirate's waste-to-energy facility, currently in the tendering phase, aims to process 900,000 tons of waste annually. Additionally, Abu Dhabi had launched a comprehensive Single-Use Plastic Policy and had banned single-use plastic bags. These initiatives reflect Abu Dhabi's commitment to reducing landfill waste and promoting recycling and renewable energy sources. Ultimately, Abu Dhabi is aiming for an 80% diversion rate by 2031.

Sharjah's waste-to-energy facility, a collaboration between Bee'ah and Masdar, processes 300,000 tons of municipal solid waste annually, generating 30 megawatts of electricity. This facility supports Sharjah's strategy to minimize landfill waste and enhance sustainable energy practices.

The RDF facility in Umm Al Quwain, a partnership between the government and the private sector, produces refuse-derived fuel (RDF) from municipal solid waste generated in the emirates of Ajman and Umm Al Quwain. The facility, operational since 2023, receives 1,000 tons of municipal solid waste daily, converting 80% of this waste into RDF for use in cement plants.

4.2.5 Buildings

Sectoral Base Year and 2035 Target

Emissions for the buildings sector is set to reduce by 79% to 15 MtCO₂e by 2035, driven by an expected increase in population and the resulting demand for new buildings. To manage this growth, the UAE has approved additional policies to accelerate the decarbonization of buildings, including revising building codes for efficiency, rolling out building energy labels, and ramping up retrofitting rates. The policy package also aims to promote the installation of solar thermal and efficient cooling systems, complemented by awareness for energy consumption to encourage conservation. This illustrates balancing of increased building count with increased energy efficiency and renewable energy coverage of the grid.



Existing Federal Policy Levers and Initiatives

The UAE is dedicated to enhancing energy efficiency and reducing water demand within its building sector through comprehensive federal policies. In 2021, the UAE introduced the National Energy and Water Demand Side Management Programme 2050, which targets significant sectors such as the built environment, transport, agriculture, and industry. This programme aims to reduce energy consumption by 42%-45% and water consumption by 50% by 2050 compared to business-as-usual scenarios. This initiative supports cost reduction and investment, aligning with the UAE Energy Strategy and the UAE Water Security Strategy 2036.

As part of the DSM Programme, there are periodic updates to building codes to enhance the efficiency of new constructions and retrofit existing buildings. Measures include the increased use of efficient cooling systems, rooftop photovoltaic systems, and solar water heating. Additionally, a national building code has been implemented to set minimum energy efficiency standards across all emirates. This coordinated effort ensures short, medium, and long-term initiatives are integrated to maintain energy and water supply security. The policy also provides guidelines for the contractual framework among energy stakeholders and the various contracting mechanisms to consolidate the processes of doing business, financing, and partnerships between the public and private sectors. Moreover, the UAE is developing a roadmap to achieve net-zero emissions in the buildings and construction sector by 2050, covering all seven emirates. The roadmap will be based on the structure and the methodology of the Global ABC Roadmap for Buildings and Construction 2020-2050. The roadmap assesses the eight activities following the Global ABC methodology, where each activity represents a segment of the buildings and construction sector and represents an essential ingredient of how buildings influence the environment. These activities are Urban Planning – New buildings – Existing buildings – Building operations – Appliances and systems – Materials – Resilience and Clean Energy. the roadmap will be accomplished by 2027.

One of the key projects under the national DSM Programme is the reduction of operational costs in federal buildings, which focuses on implementing advanced technologies to reduce energy and water consumption throughout the lifecycle of these buildings. This project aligns with the country's and the Ministry's objectives, as well as the Sustainable Development Goals. The programme has set objectives for the next five years including reducing water use by 23%, cutting down operational costs by 20 per cent in federal buildings, contributing to clean energy by 5%, promoting the sustainability of buildings by an approximate 5-10%, and raising awareness of energy and water conservation and the importance of behavioural change. In the long term, the policy is projected to decrease the demand for energy in the building sector by 51% by 2050, contributing to the UAE's sustainable development. The project is executed in collaboration with the private sector and is considered one of the largest public-private partnership (PPP) initiatives in federal buildings. The programme is seen as dynamic, and will be updated to consider changing contexts and enhanced ambitions.

Furthermore, MOEI developed the National Sustainability Guidelines NSG to facilitate achieving sustainable infrastructure development by optimizing the efficiency of utilizing natural resources, infrastructure management and operation, waste management, and circular economy. A set of 4 guidelines that were developed by the MOEI in collaboration with local governments and announced as the National Regulations for buildings and construction by H.H. Shaikh Mohamed bin Rashid Al Maktoum in December, 2022. These guidelines are designed to establish a robust framework for sustainable development in the 4 sectors of new buildings, new roads, new housing and the operation and

maintenance of existing buildings. Among these guidelines, the 'operation and maintenance' and 'housing' guidelines stand out as pioneering initiatives, setting a benchmark within the UAE and the broader region. The guidelines are equipped with specialized tools and trackers to facilitate the implementation and the follow up.

Additionally, in realizing the objectives of the UAE Net Zero by 2050 strategic initiative, the Ministry conducted a comprehensive analysis of GHG emissions and carbon footprints for healthcare facilities in the UAE. The goal was to develop a roadmap for carbon emission reduction within the healthcare sector, measure the current carbon footprint, and establish a national action plan to effectively manage it.

Notably, DoH introduced the Emirate's healthcare sustainability goals, which seek to reduce carbon emissions by 20% by 2030 and reach Net Zero by 2050. These goals are built around three main pillars: infrastructure, operations, and waste management. Furthermore, ADPHC launched the Centre's first sustainability report to communicate its efforts and achieve the sustainability goals. The report reflects ADPHC's commitment to transparency and accountability and will measure and assess its environmental, social, and economic performance.

Existing Emirate-Level Policy Levers and Initiatives

The UAE's DSM is bolstered by specific strategies at the emirate level, including Dubai's Demand Side Management Strategy 2050, Abu Dhabi's Demand Side Management and Energy Rationalization Strategy 2030, and Ras Al Khaimah's Energy Efficiency and Renewable Energy Strategy 2040. These strategies collectively support the nation's federal goals of reducing energy and water consumption and increasing the use of renewable energy.

Dubai's Demand Side Management Strategy 2050 targets a 30% reduction in energy and water consumption by 2030, escalating to 50% by 2050, compared to business-as-usual scenarios. The Dubai Supreme Council of Energy has introduced the Demand Side Management Recognition Programme to honour initiatives in energy efficiency, circular economy, and sustainability. The emirate aims to achieve a 27% penetration of district cooling and retrofit 30,000 buildings by 2030, with nearly 8,000 buildings already retrofitted by early 2023. The emirate aims to achieve a 30% penetration of district cooling and retrofit 47,000 buildings by 2030. More than 15,000 buildings and villas were retrofitted with energy efficiency measures by end of 2023. Similarly, the Safat Programme aims to ensure that all new buildings in Dubai adhere to green building standards, with a mandatory minimum bronze rating for permits. It focuses on enhancing the efficiency and sustainability of buildings through improved design, materials, and energy use. Additionally, the programme promotes retrofitting older buildings to align with sustainable practices and supports Dubai's goal of becoming a smart, sustainable city.

Ras Al Khaimah's Energy Efficiency and Renewables Strategy 2040 aims to achieve 30% savings in electricity consumption, 20% savings in water consumption, and a 20% contribution from renewable energy in the supply mix. Barjeel, the Green Building Regulations, mandates energy and water efficiency standards for new buildings, with a target to double these savings by 2040. The Building Retrofits Programme aims to retrofit 3,000 buildings by 2040, supported by an ESCO accreditation scheme to ensure qualified service providers. Ras Al Khaimah mandated adoption of energy efficiency in the government through a directive, Amiri Resolution No. 15 of 2018. A group sourcing approach was adopted to retrofit 46 buildings of the government, through energy performance contracting. In parallel, energy management systems were adopted in each entity. As a result of the improvements in assets and

consumption behaviours, overall savings of 23.5% were achieved on the utility bills vs. the 20% target. 24 entities of the Government of Ras Al Khaimah have now achieved ISO 50001 energy management certification, making Ras Al Khaimah government the first in the world to achieve this certification for all of its entities.

Moreover, Ras Al Khaimah launched Green Public Procurement (GPP) guidelines for government adoption on a voluntary basis to allow each entity to define their own pace and depth of participation. The guidelines cover products and services typically procured in offices, from furniture, ACs, and vehicles to construction activities.

Ajman's Municipality and Planning Department has reported 8,335 green buildings compliant with the emirate's green building standards since the implementation of the Green Building Decision in 2018. This initiative focuses on increasing energy efficiency, rationalizing water consumption, and reducing carbon emissions. Compliance with these standards is now mandatory for building permits, aligning with Ajman's vision of fostering a sustainable environment and green economy.

Emirates Green Building Council

The Emirates Green Building Council is a platform for advancing sustainability of the built environment in the UAE, through advocating and educating on topics related to the matter and through becoming a beacon for collaboration amongst the leaders in the sector. Since its inception in 2006, the Emirates Green Building Council has worked towards progress in the sustainability of the built environment, reflected in notable shifts in behaviour and demand. The Council with the government, private sector, academia and international NGOs to build capacities, advise regulators, and publish reports and studies.

The Emirates Green Building Council published the UAE Sustainable Built Environment Blueprint in 2024 to summarize key findings on policies and regulations, building materials and systems, green finance, data, and skills. The report highlights the need for enhanced building codes, energy-related policies, and performance requirements. It also underscores the importance of internal green material specifications, improved data accessibility, and the upskilling of the workforce. Addressing challenges in green finance and aligning market practices with the UAE's net-zero targets by 2050 are identified as priorities. The report aims to harmonize green building policies and enable a sustainable transition in the built environment.

Sustainable City – Yas Island

The Sustainable City – Yas Island in Abu Dhabi has achieved the "Estidama 5 Pearl" classification, the highest rating under Abu Dhabi's Urban Planning Council's Pearl Villa Rating System (PVRs). Developed by Aldar Properties and SEE Holding, the project features energy-efficient building designs, water conservation measures, and eco-friendly materials. Solar panels on residential and parking structures are expected to reduce energy bills by up to 50 percent. The design includes a central green spine, biodomes for community farming, and pedestrian-friendly pathways. This development aligns with Aldar's 2050 Net Zero target, with first handovers expected by the end of 2025.

LEED Certifications

In addition to the existing efforts to align to Estidama, the UAE has demonstrated a growing commitment to align with the LEED buildings certifications, as demonstrated by the 121 certified buildings hosted by

Expo City Dubai. The certification plays a key role in addressing climate change as well as meeting overarching ESG goals, enhancing resilience and providing support towards more equitable communities.

4.2.6 Agriculture

Sectoral Base Year and 2030 Target

The UAE's agriculture emissions will decrease by 39% by 2035 to 2.6 MtCO₂e. This is primarily due a decrease in energy related emissions in the agricultural sector, however emissions from the rising numbers of livestock remains. The UAE is committed to addressing key challenges in the sector, including food security, water use efficiency and land management. The implementation of advanced technologies, best practices, and supportive policies are crucial in managing emissions from agriculture and ensuring the long-term sustainability of the UAE's agricultural sector.

Existing Federal Policy Levers and Initiatives



The UAE's long-term Food Security Strategy 2051 aims to enhance food security and resilience in the agricultural sector. It includes goals for increasing local food production and improving agricultural sustainability. The strategy promotes environmental stewardship and food security by focusing on local food production, which helps reduce the carbon footprint associated with food transportation, supports local economies, and increases food security. The initiative aims to meet the objectives of the National Food Security Strategy 2051 by improving domestic production through securing purchase agreements, raising the nation's self-sufficiency on selected food commodities, and increasing UAE farmer incomes without affecting food trade. The UAE has developed comprehensive food security strategies and policies, such as the National Food Security Strategy 2051, which aims to enhance food production, sustainability, and resilience against climate change.

The National Farms sustainability initiative aligns with the UAE's ambitions for food security. This initiative aims to develop a sustainable market for national and state-level farms by securing contracts with government and semi-government agencies to supply their annual food and agricultural needs over three phases: first, by increasing the percentage of purchases by government contractors to 50% of the domestic production in 2023; second, by increasing it further to 70% by 2025; and third, by increasing it ultimately to 100% by 2030. In 2023, 56% of local purchases were achieved, exceeding the target set for 50%, pushing efforts towards progress in enhancing local agricultural sustainability.

This is complimented with the UAE Sustainable Farming mark Control Scheme, which provides the criteria for granting the UAE sustainable Farming Mark. The scheme expands with the inclusion of diversified farming categories to cover sustainability requirements that suit the UAE climate, as well as highlight sustainably produced products in the market.

Existing Emirate-level Policy Levers and Initiatives

Abu Dhabi's Food Security Strategy is a comprehensive approach designed to enhance food security in the Abu Dhabi emirate and address the challenges posed by its hyper arid climate, limited arable land, and growing population. This strategy is part of the UAE's broader national efforts to achieve food security and sustainability. The Abu Dhabi Agriculture and Food Safety Authority (ADAFSA) plays a key role in implementing the food security strategy by regulating agriculture, ensuring food safety, and promoting sustainable practices. Recognizing the importance of integrated management of data on food security, ADAFSA launched the Agriculture and Food Security Platform in June 2024. This platform provides an integrated repository for all statistics and data that contribute to analysing the current situation and forecasting future challenges in the food and agricultural sectors. It allows for the analysis of updated data and the generation of reports that help policymakers make decisions to improve the efficiency and effectiveness of policies and programmes related to food security and develop a sustainable and integrated food system.

The Sharjah government has been focusing on increasing local food production through various initiatives, including organic farms and vertical farming projects, aligning with the national food security strategy and reducing carbon emissions. Wheat cultivation is one of these projects developed by the Sharjah Department of Agriculture and Livestock. This project adopts smart and sustainable agricultural practices, using modern technologies to increase wheat production while reducing water usage by 30 percent, and conducting research at the Mleiha Farm's biotechnology laboratories. These efforts led to the development of the 'Sharjah-1' wheat strain, which is more climate-resilient, water-efficient, highly productive, and nutritionally rich.



Climate-Controlled Greenhouses Projects

Climate-controlled greenhouses in the UAE are a pivotal component of the country's strategy to develop sustainable and efficient agriculture in a hyper arid climate. These advanced facilities enable year-round crop production by creating optimal growing conditions regardless of external weather conditions. The UAE has been actively investing in and developing climate-controlled greenhouse projects to advance sustainable agriculture and improve food security. These

projects leverage advanced technologies to create optimal growing conditions for crops throughout the year. The Emirates Hydroponics Farm: Located in Dubai, is one of notable climate-controlled greenhouse projects, this greenhouse employs hydroponic systems within a climate-controlled environment to grow a range of crops, reducing water usage and increasing production efficiency.

Promoting Organic Farming

The UAE's Vision and subsequent sustainability goals emphasize environmental responsibility and resource efficiency. Organic farming aligns with these goals by promoting sustainable land use and reducing ecological footprints.

Controlling fertilizer in Agriculture

Addressing GHG emissions from farming through the efficient use of fertilizers is a key strategy for sustainable agriculture. As the UAE set 2035 target, specific goals and actions are outlined to achieve significant reductions in agricultural emissions.

Fertilizer use, while essential for crop productivity, can lead to significant GHG emissions. Controlling fertilizer use in the UAE is crucial for ensuring environmental sustainability, protecting public health, and maintaining agricultural productivity. Increasing awareness about the efficient use of fertilizers is crucial in addressing GHG emissions from agriculture. The UAE has made significant strides in developing legislation and regulations to manage fertilizer handling and trading effectively. These efforts aim to ensure safe use, protect public health, and minimize environmental impacts.

Research and Development in agriculture

Research and Development (R&D) in agriculture in the UAE is a critical component of the country's strategy to enhance food security, overcome environmental challenges, and promote sustainable practices in agriculture. The UAE fosters partnerships between government bodies, private sector companies, and international research institutions to drive agricultural innovation and research.

Additionally, the UAE hosts several research centres dedicated to agriculture and food security, such as the International Centre for Biosaline Agriculture (ICBA), which is a prominent research institution based in Dubai, UAE, focused on advancing agriculture in saline and hyper arid environments. ICBA is dedicated to addressing the challenges of saline soils and limited water resources through innovative research and technology, and it provides training and capacity-building programmes for farmers, researchers, and policymakers. These programmes focus on applying research findings and new technologies in the field, in addition to supporting educational initiatives to foster a new generation of agricultural scientists and practitioners with expertise in saline agriculture.

Sustaining agriculture practices in the UAE is crucial for addressing the challenges posed by its hyper arid climate and limited natural resources. The UAE's approach involves a combination of advanced technologies, government policies, and community engagement to ensure that agricultural practices remain viable and environmentally friendly, in addition to implementing adaptive practices.

In June 2024, the Agrifood Growth & Water Abundance Cluster has been launched in the UAE which represents a strategic initiative aiming at addressing key challenges related to agriculture, food security, and water management in the region. This cluster is typically focused on fostering innovation, research, and collaboration to enhance the sustainability and efficiency of the Agri-Food and water sectors, playing a leading role in global efforts to tackle food security challenges and water scarcity. Companies by joining AGWA are benefiting from an integrated cluster that includes advanced infrastructure, funding access, and partnership with government.

4.2.7 Negative Emissions

The UAE is committed to remove CO₂ from the atmosphere mainly by using nature-based solutions (NbS) (e.g., by planting mangroves) and engineering-based solutions. The country will also explore innovative Direct Air Capture (DAC) solutions which extract CO₂ directly from the atmosphere, which in the long term is critical to reach net zero emissions. By 2035, the UAE aims to enhance negative emission capacity to -9.3 MtCO₂e.

Nature-based solutions

The UAE recognizes that neither a 1.5-degree pathway nor global resilience under the Paris Agreement can be fulfilled without achievement of global nature goals, and vice-versa. The UAE climate policy is accordingly informed by the Kunming-Montreal Global Biodiversity Framework (and vice-versa), as well as previous efforts to address biodiversity loss; the UAE was the first country in the MENA region to endorse the 30x30 biodiversity goal, including as a lever for climate action. The 30x30 goal aims for at least 30% of land and sea areas—especially those crucial for biodiversity—to be effectively, equitably managed, and ecologically represented through well-connected conservation systems. Additionally, the framework seeks nature-based contributions to global climate mitigation efforts to the tune of at least 10 GtCO₂e per year.



The UAE's environmental strategies are underpinned by the National Biodiversity Strategy and Action Plan (NBSAP 2031) and the National Desertification Strategy 2030. These frameworks guide the conservation of biodiversity and sustainable land management, aligning with global efforts under the CBD Kunming-Montreal Global Biodiversity Framework and the UNFCCC's UAE Consensus.

Domestically, the UAE met the Aichi target of protecting by 2020 at least 18.4% of terrestrial and inland water and 12.1% of coastal and marine areas, and is working to contribute to the 30% goal for 2030.

The UAE is also committed to atmospheric CO₂ removal through advanced nature-based solutions (NbS) such as extensive mangrove afforestation. Currently, the total mangrove coverage area is 201 squares

kilometres, including both natural and planted mangroves. By 2030, the UAE aims to plant an additional 160 million mangroves, significantly enhancing biocapacity.

On the global stage, the UAE spearheads the Mangrove Alliance for Climate (MAC), aiming to scale up and accelerate mangrove conservation, restoration, and resilience. Since its inception at COP27, 41 countries have joined the UAE and Indonesia in this initiative to promote mangrove conservation. During COP28, the UAE reinforced its commitment by joining the global effort to achieve the Mangrove Breakthrough goal of conserving and restoring 15 million hectares of mangroves by 2030.

Recognizing the ocean's critical role as a climate-regulating ecosystem, the UAE was the first nation to endorse the Seagrass Breakthrough initiative during COP28. This initiative aims to protect and restore 150,000 km² of seagrass meadows by mobilizing at least USD 1.2 billion by 2030, with seagrasses sequestering carbon up to 35 times faster than tropical rainforests. The UAE's President also this year joined the High-Level Panel for a Sustainable Ocean Economy.

The UAE at COP28 furthermore introduced, with China as CBD COP15 President, the Joint Statement on Climate, Nature, and People, which encourages signatories to coordinate their nature and climate strategies. The spirit of the Joint Statement was reflected in paragraph 33 of the UAE Consensus, which includes calls to halt and reverse deforestation by 2030, as well as enable alignment with the Kunming-Montreal Global Biodiversity Framework. The UAE has committed substantial financial resources to support both domestic and international nature and climate initiatives. During COP28's Nature, Land Use, and Ocean Day, the UAE facilitated USD 2.6 billion of announcements for integrated nature-climate action, including USD 100 million in new UAE grants.

The UAE's 'Nature-based Solutions for Climate, Biodiversity and People' project - a multi-stakeholder partnership including MOCCA, Ministry of Economy, EAD, UAQ, ICBA, coordinated by EN-WWF and supported by HSBC, aims to bring together policymakers, scientists, local communities and the private sector to address key opportunities and barriers toward the successful implementation of NbS in UAE's coastal ecosystems. The project engagements include management and restoration of Blue Carbon Ecosystems; identification of climate and socioeconomic benefits (including blue carbon accounting, feasibility of setting up blue carbon offset projects, feasibility of alternative income generation related to food and ecotourism); ensuring NbS integration in policy and management; and development of a pipeline of local NbS opportunities and partnerships for scaling up and financing such solutions.

Engineering-based solutions

Achieving Net Zero will no doubt require the intervention of several tools to capture carbon including both technological and nature-based solutions. Contributing to both "Operation 300bn" as well as the UAE's Net Zero Strategy, Astha Biotech aims to establish a new manufacturing facility, which will spread over 38,000 sqm and capture up to 1,000 metric tons of CO₂ annually, using carbon from local industries to grow microalgae with high-value applications across the health, cosmetics, food, and aquaculture industries.

EMSTEEL, a major steel and cement player in the UAE, in partnership with Abu Dhabi National Oil Company (ADNOC), has installed CCUS technology that allows them to capture up to 800,000 tons of CO₂ annually through "Al Reyadah Facility". This way around 45% of CO₂ generated from Direct Reduction Plants is captured.

ADNOC is exploring DAC projects in the UAE and North America, including construction of the first 1 mtpa CO₂ scale facility outside the United States. This project could inject CO₂ into the UAE's saline aquifers for permanent storage.

In a strategic transaction in January 2023, ADNOC acquired a 10.1% equity stake in Storegga, a leading global developer of geological storage for industrial CO₂ emissions. The investment supports the company's strategy to leverage carbon management partnerships and technology, to advance global CCS projects to accelerate decarbonization. ADNOC has signed a series of strategic collaboration agreements with technology pioneers around the world to advance CCS technologies and accelerate collective decarbonization. These partnerships will develop global carbon management platforms to help decarbonize customers in Europe, North America and the Asia-Pacific region.

5. Cooperative Approaches

5.1 National Arrangement

The UAE's dedication to environmental integrity is exemplified by its implementation of Article 6 of the Paris Agreement. This encompasses a comprehensive accounting framework designed to prevent double counting, enhance transparency, and foster sustainable development that adheres to the guidance adopted by the Conference of the Parties serving as the meeting of the Parties to the Paris Agreement (CMA).

The UAE's National Arrangement of Carbon Market and institutional setup align seamlessly with the mandates and requirements of Article 6 of the Paris Agreement. This alignment is achieved through active engagement with relevant governmental entities and stakeholders.

MOCCA is the primary entity responsible for the implementation of carbon markets tools in the UAE. This involves close coordination with pertinent stakeholders to ensure the effective execution of these markets. MOCCA aims to operationalize a national carbon registry platform, which will manage and report transactions involving national credits and ITMOs under the cooperative approaches outlined in Article 6 of the Paris Agreement. This platform will play a pivotal role in tracking and verifying carbon credits.

To further enhance transparency and accuracy, the national carbon registry will be integrated with the MRV system once it is established, to manage and report ITMO transactions as part of the cooperative approaches specified in Article 6. UAE's approach will comply with UNFCCC Decision 18/CMA.1 paragraph 77(d), ensuring that all transactions are transparent, and verifiable. Furthermore, the UAE will incorporate any additional guidance agreed upon and adopted by the CMA to ensure the robustness, integrity and credibility of voluntary cooperation.

In addition to market mechanisms, the UAE also advocates for non-market approaches under Article 6, paragraph 8 of the Paris Agreement. MOCCA is spearheading efforts to implement these approaches, which aim to facilitate climate action through international cooperation with the focus on sustainable

development and poverty eradication, underscoring the UAE's holistic approach to addressing climate change.

6. Adaptation

6.1 Introduction

The UAE recognizes that viable climate strategies and official submissions – including NDCs – should include both adaptation and mitigation content. Although many forms of climate action have both mitigation and adaptation co-benefits, this section – for ease of reference – highlight adaptation actions that the UAE is taking in support of overall climate ambition.

Situated in a region that is highly vulnerable to the consequences of climate change, the UAE is confronted with the potential impacts of climate change that includes extreme heat, storm surge, sea level rise, water stress, dust and sandstorms, and desertification which will lead to a range of impacts on critical sectors.

Adopted in December 2023 at the UNFCCC COP 28 in Dubai, the UAE Framework for Global Climate Resilience expands on the Global Goal of Adaptation (GGA) as established in the 2015 Paris Agreement. The framework has highlighted more than ever, the “collective well-being of all people, the protection of livelihoods and economies, and the preservation and regeneration of nature, for current and future generations, in the context of the temperature goal.” It has signalled the imperatives of accelerating global action on, and support for, adaptation which links it to the importance of scaling up adaptation finance that is timely and predictable. To this end, the framework details a set of targets for key sectors essential for resilience and adaptation to protect human wellbeing and sustainable development. At the heart of the UAE Framework is the emphasis on inclusion which underlines a participatory and gender-responsive approach and encourages countries to align their national monitoring, evaluation and learning systems with the global targets as a guide to set up and track adaptation progress.

Building on its earlier significant actions on adaptation which established the National Climate Change Adaptation Programme in 2018 and the ensuing conduct of the Climate Risk Assessment in 2019 of priority sectors on health, environment, energy, infrastructure and insurance, the UAE has further demonstrated its unwavering commitment to reducing its vulnerabilities to climate change through the launch of its National Adaptation Plan (NAP) Roadmap at COP28. Guided by the UNFCCC Technical Guidelines for the NAPs Process, the UAE NAP Roadmap lays down the essential elements and the implementation approach of the NAP as a primary vehicle for implementing adaptation at the national level. It outlines the modalities for inclusive stakeholder engagement and robust institutional support that targets to integrate national climate targets and adaptation planning activities at the Emirate level across these sectors and allows for cross-sectoral linkages in both planning and implementation.

The NAP Roadmap has also underscored the imperatives of climate governance and institutional coordination at both the federal and emirates level and across the sectors; stakeholder engagement; necessity of climate risks and vulnerability assessments that fundamentally underpin an evidence-based planning, implementation, monitoring, evaluation and learning and the role of data management; mobilizing adaptation finance; awareness-raising and capacity development; and one which fosters an enabling environment to ensure that no one is left behind through a gender and social inclusion

assessment in support of identifying the existing difference in adaptation needs and capacities of different vulnerable groups in UAE. In 2024, initiatives towards the UAE NAP Development will focus on showcasing a gender-responsive and socially inclusive UAE NAP which considers the broader governance context across priority sectors at the federal and emirates level, and a stakeholder mapping to guide the development of the NAP engagement plan.

Mitigation and Adaptation Co-benefits

The UAE's adaptation efforts and economic diversification plans are designed to yield significant mitigation co-benefits, reflecting an integrated approach to climate action. Specific projects and measures further illustrate these co-benefits. The UAE's initiatives in the energy sector, such as the expansion of renewable energy projects and the promotion of energy-efficient technologies, directly address both adaptation and mitigation goals. Renewable energy projects reduce reliance on fossil fuels, cutting emissions while providing a stable energy supply resilient to climate impacts. The integration of smart grid technologies ensures that energy distribution is both efficient and adaptable to changing climate conditions. Additionally, the waste management sector showcases the synergy between adaptation and mitigation. Initiatives to improve waste recycling and increase waste-to-energy projects reduce methane emissions from landfills while providing alternative energy sources.

The UAE's NAP Roadmap, exemplifies how adaptation actions can simultaneously contribute to mitigation. Prioritizing sectors such as energy, water resources, coastal resources, human settlements, and urban planning, the NAP Roadmap identifies measures like enhancing water efficiency and management, which directly reduce energy consumption associated with water treatment and distribution, thereby lowering greenhouse gas emissions. Urban planning strategies that incorporate green building standards and energy-efficient infrastructure not only enhance resilience to climate impacts but also reduce carbon footprints. Through these integrated strategies and innovative projects, the UAE demonstrates how adaptation and mitigation can be effectively combined to enhance climate resilience and reduce greenhouse gas emissions across key sectors.

6.2 Sectoral Adaptation

6.2.1 Energy

The climate crisis poses serious risks to the operations of the domestic power industry. Power plants become less energy efficient as temperatures rise beyond the thresholds they were originally designed to operate within, while warmer cooling water might also further reduce power output. These effects of climate change could cause deterioration of power facilities, resulting in reduced reliability and increased maintenance costs. Other risks include extreme weather events affecting the uptime and functioning of power facilities, while sea level rise could damage coastal power infrastructure.

Energy regulators and utilities are considering climate-related impacts in current and future operations and are putting in place adaptation measures.

Existing Federal Policy Levers and Initiatives

To avoid power facility damage and deterioration, the UAE is conducting regular maintenance checks and exploring modernization opportunities by establishing partnerships with industry leaders in energy-efficient technologies.

Given the potential increase in power needed for cooling purposes due to higher temperatures, the UAE is expanding clean energy generation. Furthermore, the UAE is exploring state-of-the-art technology in environmentally friendly cooling technologies and reduction of refrigerant use, such as the use of heat (e.g., geothermal and waste heat), the use of waste or recycled water, or that of low Global Warming Potential (low-GWP) and zero Ozone Depletion Potential (zero-ODP) refrigerants. The UAE is also targeting energy and water demand reduction by adopting advanced energy efficiency technologies and promoting awareness initiatives as outlined in the Mitigation chapter.

The national efficient cooling system initiative aims to enhance district cooling systems' efficiency by standardizing related standards and incorporating smart systems and modern technology. This initiative strives to improve air conditioning performance, reduce maintenance costs, and lower emissions from the building sector. By integrating advanced smart systems, it seeks to keep pace with technological advancements and offer cost-effective cooling solutions for society.

Modernization projects are being expanded to include the latest and most reliable climate change projections to enhance infrastructure resilience. This encompasses substation modernization using IEC 61850 Edition 2 and integrating predictive maintenance systems such as AI, Digital Twin, and IoT to predict and mitigate issues before they lead to outages. These systems are part of broader efforts to improve network reliability and reduce maintenance demands, ensuring that power plants maintain high reliability and operational efficiency amidst evolving climate conditions.

Regarding climate resilience, the power sector is fortifying its infrastructure against potential damage from rising sea levels and increased storm activity through rigorous inspections and assessments of coastal assets. Adaptation measures include enhancing the structural integrity of these assets and implementing comprehensive maintenance schedules to monitor asset conditions continuously, thus ensuring preparedness for adverse weather events. This proactive approach is critical for safeguarding essential energy infrastructure and maintaining service reliability in vulnerable coastal areas.

Efforts to boost energy efficiency and emergency responsiveness are also prominent in the power sector's adaptation strategy. Improved design and construction of solar energy systems to withstand extreme conditions are underway, with current solar park designs enhancing airflow and reducing operational temperatures to optimize output. Additionally, the deployment of energy-efficient technologies across all facets of power generation ensures that operations remain cost-effective and resilient to temperature extremes. In emergencies, the sector's black start capabilities and frequency harmonization are crucial for quickly restoring power and minimizing disruption, with all power stations equipped with tested diesel engines ready to activate in the event of power failures.

Existing Emirate Level Policy Levers and Initiatives

At the emirate level, Dubai (DEWA PJSC) installed over 2.2 million electricity and water smart meters by December 2023 and is promoting the “Smart Applications via Smart Grid and Meters” initiative which provides various benefits to its users, such as automatic and detailed reading. In Abu Dhabi, an advanced metering infrastructure (AMI) project is enhancing utilities metering in the emirate. Additionally, existing

power plants are being modernized and upgraded to face the impacts of climate change. This includes adopting smart infrastructure, power system integration, automation, and artificial intelligence and data analytics to increase efficiency and power performance. For example, a national central cooling company is studying the potential use of nanotechnology to enhance the efficiency of new and existing assets. To reduce exposure to the impacts of climate change on power plant performance and power production, risk insurance schemes for power generation and risk management systems are being implemented. For example, DEWA PJSC has a comprehensive Climate Change Resilience Plan that is driven by a vision, guiding principles, approach, and goals to ensure the resilience of the power and water sector of Emirate of Dubai. DEWA PJSC's Climate Change Resilience Plan identifies detailed existing risk reduction measures, preventive controls and future resilience actions that address potential impacts of various climate change drivers.

Building on the success of its inaugural summit, Ras Al Khaimah Municipality will host the second edition of RAK Energy Summit at the end of November 2024. This event, themed “Create and Contribute to the Sustainable Energy Goals of the Future,” will address critical topics such as smart technologies, AI, future fuels and grids, and carbon pricing, pivotal for national and regional decarbonization.

As part of this strategy, Ras Al Khaimah Municipality launched an innovation competition for start-ups and SMEs, aiming to support the development of clean energy solutions in the emirate. The SME Edition of the RAK Energy Innovation Competition offers an opportunity for start-ups and SMEs from around the world to get market exposure and form strategic partnerships in the power, water, and industrial sectors of the UAE. Its goal is to attract leading start-ups and SMEs worldwide to propose solutions for specific energy challenges in Ras Al Khaimah, with applicability to the broader MENA region. More than 75 companies from over 25 countries with solutions addressing one or more of three regional challenges in the fields of energy management, industrial efficiency and decentralised energy systems participated. Additionally, a sustainable energy training program, Upskill has been designed to enhance skills and expertise in energy efficiency and renewables within Ras Al Khaimah.

6.2.2 Infrastructure

The UAE's infrastructure, including its buildings, transport, water supply, sanitation, and waste management facilities — both coastal and offshore — is an essential component of the country's economy. A 2008 paper by the Stockholm Environment Institute on Climate Change Impacts, Vulnerability, and Adaptation found that the UAE could lose up to 6% of its populated and developed coastline by the end of the century because of rising sea levels. Given that 85% of the UAE's population and more than 90% of its infrastructure is located in low-lying coastal areas, the nation is preparing to face the consequences of the climate crisis on its infrastructure, including on its design, location, construction, operation, and maintenance. Extreme weather events, rising sea levels, and changes in seawater salinity and acidity due to higher temperatures could inflict damage and high strain on existing coastal and offshore infrastructure and related maintenance costs. Climate change impact on the UAE's infrastructure could also lead to economic repercussions due to transport disruption and reduced reliability of buildings. Lower-risk implications include displacement of the population residing along the coastline and increased flooding in urban areas resulting from decreased drainage holding capacity and the potential for rain fall volume and intensity exceeding normal design parameters in the region.

Existing Federal Policy Levers and Initiatives

To expand climate-resilient infrastructure, the UAE is promoting the design and construction of green buildings and the refurbishment of existing ones. The country is working on a comprehensive roadmap that covers all aspects of the urban environment, including sustainability guidelines for buildings and roads. The UAE is also investing in R&D projects for climate resilient construction materials, such as pavement and concrete, and developing infrastructure proofed against sea-level rise.



The National Green Building Regulation (NGBR) establishes a regulatory framework mandating minimum energy and water standards for new buildings in the UAE. The purpose of the NGBR is to ensure the implementation of essential sustainability measures across new buildings while allowing flexibility for adherence to higher standards set by responsible entities. It acts as mandatory guidance for entities beginning to implement efficiency measures. Local building codes across various emirates, implemented alongside the NGBR, have effectively decreased energy consumption.

Additionally, the National Smart Construction Guideline (NSCG) focuses on integrating advanced technologies and innovative practices within the UAE's construction sector. The NSCG supports strategic goals and sustainable practices by promoting efficiency and smart construction processes. It covers various technologies, including Smart Procurement, Blockchain, Electronic Document Management Systems, Virtual Reality, Mixed Reality, Augmented Reality, Digital Twin, Artificial Intelligence, Drones, Building Information Modelling, and Modular Construction. The guideline emphasizes smart planning, design, and construction throughout the project lifecycle and includes assessment tools to

evaluate and improve smart construction practices. The integration of the sophisticated systems allows for more efficient planning to help construct with environmental stressors and relievers in mind.

Recognizing the vulnerability of the coastline and the projected increase in sea levels due to climate change, the UAE is taking proactive measures to address the potential impacts of sea level rise on coastal infrastructure. In collaboration with New York University - Abu Dhabi, the Ministry of Energy and Infrastructure is conducting a comprehensive study to safeguard the coastal regions. This initiative focuses on developing sophisticated models to assess hydrodynamic interactions along the UAE coastline, identifying critical areas at risk, and proposing optimal solutions for various scenarios. By measuring the economic and environmental impacts of sea level rise, the study equips decision-makers with the tools to build adaptive and resilient infrastructure.

Similarly, the UAE has launched a ground-breaking project, the Dam Flood Alert System, which is the first of its kind in the Middle East. This system is designed to predict dam floods by monitoring rainwater flow through specialized cameras installed in key valleys and connected to the Federal Infrastructure Control Room. These cameras continuously monitor rainwater flow, analyse the data, predict the likely timing of flooding, and send warning notifications to the specialized entities.

Moreover, to enhance the liveability and sustainability of UAE cities, a 3D digital twin is being developed using live geospatial data. This innovative tool includes all facilities and infrastructure assets, and service facilities with the aim of presenting resilient scenarios for potential risks, natural disasters, and energy and water consumption patterns, and waste management. It will support decision-making for infrastructure efficiency, carbon-footprint reduction, and future city planning, aligning with national competitiveness goals.

Additionally, the UAE is considering developing design specifications for environmentally friendly concrete pavement surfaces. These specifications aim to reduce surface temperatures at night and mitigate rainwater drainage issues, contributing to infrastructure resilience against climate impacts. Recognizing the recent frequent heavy rains and subsequent floods, an ongoing hydrological study in 22 basins across the northern and eastern coasts is being considered to reduce flood risks and maximize the benefits of rainwater. These studies would support the development of various surface water projects, including dams, channels, dikes, and breakers, to enhance water recharge and flood management.

Existing Emirate Level Policy Levers and Initiatives

Reducing infrastructure risk will require investment in the design and construction of climate-resilient infrastructure. This includes urban plans that address the issue of operating and maintaining the existing infrastructure, as well as the design and construction of new infrastructure. For example, the Abu Dhabi 2030 Urban Structure Framework Plan — currently being reviewed and updated to account for climate change impacts — sets out the vision for the future development of the capital and integrates environmental and social considerations into all the principles it establishes for the growth of the city. The plan recognizes that reliable infrastructure is fundamental to fostering economic advancement and managing the transport of energy, water, and waste within the urban system, and is key to protecting the city's urban and natural environment. This is further compounded by the understanding that future planning must be at the forefront under the notion that infrastructure has a long lifespan and should be built with the future requirements and conditions in mind.

Similarly, the Fujairah 2040 Plan — developed to account for a significant increase in population — is also focusing on enhancing housing and transportation facilities with road improvements, and the construction of water barriers, ports, and additional healthcare facilities.

Ras Al Khaimah has recently completed an Emirate wide flood mitigation study to protect existing and future planned urban areas from the likely increased intensity of rainfall events and frequency of adverse weather events. A total of 32 dams, 82 collection ponds and 195 km of open drainage channels have been planned to capture the large run-off flows generated in the mountainous rural areas, while an additional network of buried drainage pipelines will drain the run-off flows generated in the urban areas themselves. Designs have been developed and construction of these assets is already underway. The emirate is also developing strategies to face increased temperatures. Ras Al Khaimah has recently adopted Rafah, its first Sustainable Community Guidelines, for the design and construction of new infrastructure. Rafah specifies

several design changes to public infrastructure aimed at improving liveability and walkability of communities, while also mitigating the urban heat island effect through greenery, shading over walkways, and materials with high reflectivity. These measures are expected to improve outdoor thermal comfort of residents. Ras Al Khaimah is also investing in researching outdoor comfort solutions and technologies. An R&D centre has been established to explore transformative ways to meet the challenges of integrating outdoor comfort. Several trial installations have already been made to understand the performance of various outdoor comfort solutions in urban environments in the UAE, and a first residential community designed following Rafah's guidelines is currently being planned.

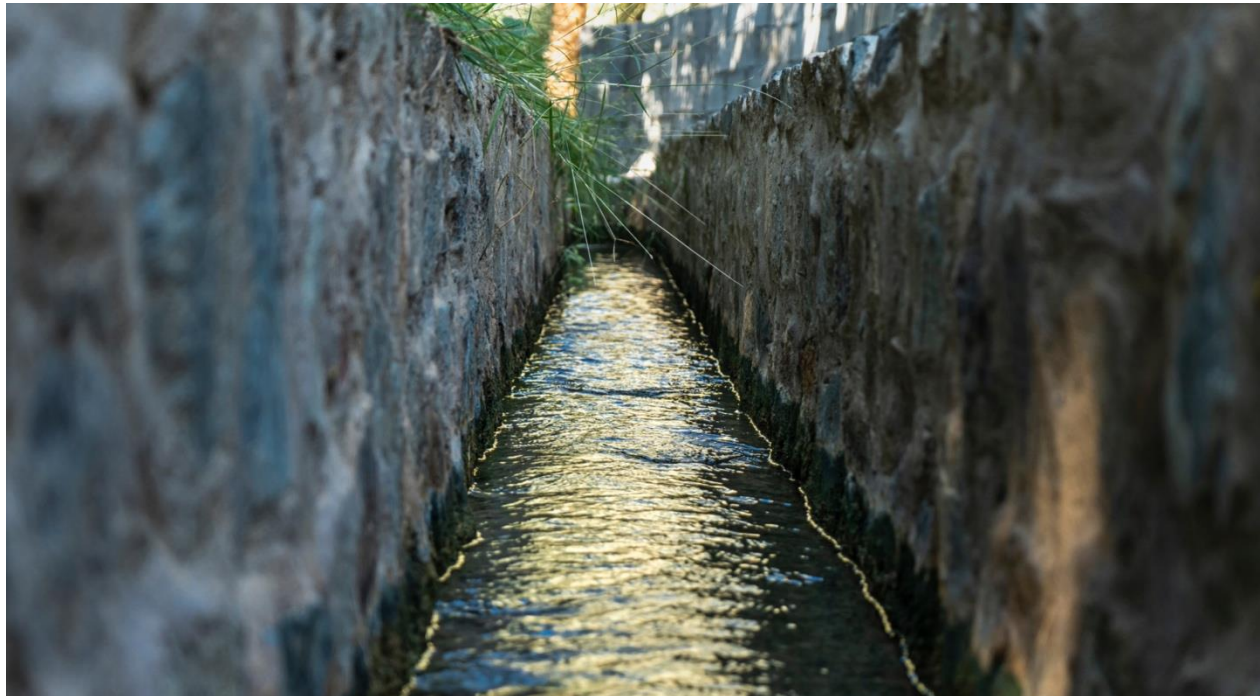
As the UAE climate-proofs its infrastructure and communities, emergency and disaster response plans are being put in place to ensure readiness. Response plans have been designed in conjunction with women, youth, and at-risk groups to reflect the needs of all individuals. Physical safeguards in place include coastal monitoring programmes (e.g., Dubai's Realtime Coastal Monitoring and Coastal Zoning in Abu Dhabi) and early warning systems (such as for flood or fog detection) that send warning messages via smartphones to the population during extreme events. Abu Dhabi has also planned the construction of seawalls to respond to storm surges. Additionally, disaster management benefits from space-based technologies, because remotely sensed data is the basis for systems and models that can predict weather disasters and issue early warnings. For this reason, the UAE Space Agency is looking for imagery analysis to conduct rapid assessments of flooding damage and to provide recommendations on setting up a comprehensive flood monitoring service for such events.

In addition to emirate-based building codes, the UAE has more than 40 free zones, each following its own regulations. Notably, Trakhees and Masdar free zones have adopted green building regulations. Trakhees regulations, launched by the Environment, Health and Safety (EHS) Department of Trakhees, the regulatory arm of Dubai World-Ports, Customs, and Free Zone Corporation (PCFC), were among the first green building regulations in the UAE. As of December 2022, 75 projects were following the Trakhees in-house certification path, and 76 projects were following the Green Business Certification Inc. (GBCI) path.

Over the past decade and a half, several leading developers and industry players have adopted advanced building and construction standards, contributing to significant market upskilling and improved sustainability performance. These pioneers include Masdar City, Expo City Dubai, The Sustainable City, Majid Al Futtaim, ICD Brookfield Place Ltd., and Aldar. These entities have recently committed to achieving net-zero emissions by 2050, showcasing their dedication to sustainability and environmental responsibility.

Water & Sanitation

Water is a critical resource for the UAE, a country characterized by its hyper arid climate and limited natural freshwater sources. The UAE has made significant strides in water management, emphasizing sustainability and efficiency to ensure a secure water future. The nation's comprehensive approach includes innovative policies, advanced technologies, and international cooperation, all aimed at overcoming the challenges of water scarcity and ensuring the well-being of its population.



Adaptation efforts are focused on mitigating the effects of warmer cooling water which leads to reduced power output in desalination processes. To counter these challenges, the sector promotes and utilizes climate-resilient technologies. Current initiatives include the adoption of reverse osmosis technologies at the Fujairah power plant, and multi-effect distillation processes that utilize waste heat from turbines to evaporate seawater, alongside the implementation of semi-permeable membranes for filtering. Furthermore, to address the reduced efficiency in water desalination caused by decreased temperature differences between cooling water and steam, advanced technological solutions and process optimizations are being explored and implemented.

In the second year of implementation, the National DSM Programme is now in full swing. It has already reduced water usage by 513 million cubic meters, achieved 100% provision of improved drinking water and sanitation services, and increased treated wastewater reuse to 77%, with a target of 95% by 2036. Additionally, water loss has been reduced to 11%, with a target of 10% by 2036, and the water scarcity index improved to a score of 2, dropping 4 points.

Moreover, the UAE Water Security Strategy 2036 aims to ensure sustainable access to water in normal and emergency conditions, aligning with local regulations and WHO standards. The strategy focuses on three main programmes: The Water Demand Management Programme, the Water Supply Management Programme, and the Emergency Production and Distribution Programme. Also, the strategy tackles policy development, legislation, water conservation awareness campaigns, advanced technologies, innovation, and building national capabilities in water security. The primary objectives include reducing total water

demand by 21%, increasing the reuse of treated wastewater to 95%, and expanding national water storage capacity.

The strategy emphasizes sustainable water resources management through its Supply Side Management Programme, which focuses on the expansion of sustainable membrane-based seawater desalination, increased use of treated sewage effluent, and conservation and optimization of groundwater usage. It addresses challenges associated with water scarcity through three main programmes: supply side management, demand side management, and production and distribution during emergency scenarios.

The UAE Hydrological Map initiative assesses the suitability of the country's surface water and groundwater resources for the construction of dams and water facilities. Other technologies implemented by the UAE to increase water resource availability include rainwater harvesting in dams and artificial injection of wastewater or stormwater into the ground to replenish groundwater reserves. Additionally, significant investments in advanced monitoring and management systems are being made to track groundwater levels and quality, ensuring that extraction rates are sustainable.

Demand Side Management focuses mainly on potable and agricultural water demand reduction, promoting efficient water use practices and technologies. It also includes Non-Revenue Water (NRW) reduction strategies to minimize water loss in distribution systems, thereby increasing overall water efficiency. The production and distribution during emergency scenarios programme enhance interconnections between water authorities, increases strategic storage capacity, and improves water transmission networks to ensure water availability during emergencies.

And to further solidify the county's strong commitment to sustainability, efficiency, and international cooperation, the UAE actively expands its support in water and sanitation-related activities and programmes to developing countries. The Mohamed bin Zayed Water Initiative aims to confront the urgent challenge of water scarcity worldwide. It also seeks to enhance awareness of the severity of the water crisis and accelerate technological innovation to address these challenges. Similarly, the UAE Water Aid Foundation Suqia, a non-profit organization, was established to support international efforts to provide potable clean water to people in need around the world and to find permanent, sustainable, and innovative solutions to water scarcity. The UAE Water Aid Foundation conducts studies and research in coordination with educational, academic, and international organizations to support water production using solar power and contributes to financing and supporting water-technology projects to combat drought.

6.2.3 Health

Impacts of climate change on human health are severe and complex, as they include both direct exposure, such as to extreme weather events (including storms, extreme heat, floods, droughts and wildfires), and indirect consequences like poorer air quality and have also been associated with mental health conditions like elevated levels of anxiety, depression, suicide, and post-traumatic stress disorders. Climate change can lead to asthma attacks and other respiratory and cardiovascular health effects. Higher temperatures also pose a challenge to food safety as the contraction of water- and food-borne diseases may rise in frequency. The UAE faces a high risk of reduced productivity of outdoor workers due to heat stress, as well as morbidity and/or mortality caused by heat stroke. These risks are of relevance to the UAE given its desert climate and the high number of outdoor workers who can develop medical symptoms, diseases, and injuries as a result.

Health consequences, such as increased rates of mortality and morbidity, respiratory diseases, malnutrition, mental health issues, cardiovascular diseases, non-communicable diseases, heat stress and strokes, waterborne diseases, and vector-borne diseases, will place added pressure on communities and healthcare systems. Moreover, climate change will impact health facilities directly and indirectly, affecting infrastructure, energy supply, and their capacity to provide services during climate hazards.

Furthermore, climate change undermines other social determinants of health, such as food systems, clean water access, and equality in healthcare access. These effects are particularly severe for vulnerable groups, including children, women, new-borns, the elderly, and individuals with pre-existing medical conditions.

The UAE faces a high risk of reduced productivity of outdoor workers due to heat stress, as well as morbidity and/or mortality caused by heat stroke. These risks are of relevance to the UAE given its desert climate and the high number of outdoor workers who can develop medical symptoms, diseases, and injuries as a result.

Existing Federal Policy Levers and Initiatives

The UAE is already taking preventative actions to address these climate-related health challenges and has issued a ministerial decree that requires employers to provide outdoor workers with a break during the peak summer to avoid heat-related illnesses. According to the updated Ministerial Resolution No. 44 of 2022, all work performed directly under the sun and in open places shall not be allowed between the peak hours of 12.30 pm and 3 pm from 15 June to 15 September every year.

In efforts to affirm the country's commitment to establishing a climate-resilient healthcare system that is both inclusive and forward-thinking, the Ministry of Health and Prevention (MoHAP) has showcased the UAE's National Vulnerability and Adaptation Assessment Programme for Health and Climate Change. This initiative was part of its participation in the Health Day activities held on the side-lines of COP28, recognizing the profound impact of climate change on human health.

The extensive assessment was conducted through a rigorous methodology focusing on risk assessment principles, utilizing diverse data sources and analytical methods. It evaluated the impact of climate change on conditions related to heat, air quality, non-communicable diseases, respiratory diseases, cardiovascular health, mental health, vector borne diseases and foodborne disease

The UAE is also participating in the Sustainability Accelerator Tool (SAT) project, run by World Health Organization Regional Office for the Eastern Mediterranean, in collaboration with the Geneva Sustainability Centre. This project aims to pilot the recently developed SAT in seven selected hospitals across seven countries in the region. The innovative tool assesses organizational maturity and performance across key indicators related to climate and sustainability, testing its effectiveness in enhancing sustainability practices and measuring progress through maturity diagnostics and measurable indicators. This digital platform empowers healthcare leaders to promote sustainable, low-carbon, equitable, and resilient healthcare practices. In parallel, the UAE issued Federal Law No. 2 of 2019 Concerning the Use of Information and Communication Technology (ICT) in Health Fields; and adopted telemedicine as an important element to reduce carbon footprint in the patient healthcare pathway.

Moreover, the country plans to expand its current early warning system to include elements related to health-related weather concerns, such as dust storms and high temperatures.

The UAE has implemented measures to facilitate collaboration between public health and climate authorities, as well as to equip healthcare workers with the necessary skills to manage the health risks associated with climate change, especially for vulnerable populations such as the elderly, pregnant women, and those at high risk. Additionally, the country is strengthening its regulations and policies related to environmental health determinants, including water and air quality, food systems, and waste management. A set of additional policies is under consideration, such as the use of advanced technologies to protect outdoor workers from the heat, and enhanced surveillance on heat-related illnesses.

UAE's health sector has a role in advancing the mitigation effects of climate on health and the creation of climate-resilient and environmentally sustainable healthcare systems. In 2023, the UAE had conducted a national health vulnerability and adaptation (V&A) assessment using the WHO tool. This helped outlining the health impacts of climate change, the most vulnerable population and the importance of implementing integrated surveillance and climate-informed health early warning system. The health sector is working to develop the health-sector adaptation plan that is based on the National Adaptation Plan.

Existing Emirate Level Policy Levers and Initiatives

Abu Dhabi is raising awareness through its safety in heat programme that aims to limit heat exposure at work. The Thermal Work Limit (TWL) heat stress index is being used to assess the suitability of working conditions. This is further compounded through Abu Dhabi's strategic framework, inclusive of a robust framework for addressing climate change with the Abu Dhabi Climate Change Strategy 2023-2027.

Moreover, in Abu Dhabi, the healthcare sector regulator is the first to collaborate with the Partnership for Health System Sustainability and Resilience (PHSSR). The PHSSR is an international collaboration between academic, governmental, and private institutions to explore novel solutions in clinical research, digital health, and innovation. The aim of the collaboration is to futureproof the healthcare system against future crises, such as pandemics, natural disasters, and climate change.

Recognizing the significance of dedicating a day to health for the first time in the history of COP conferences, various health providers rushed to reflect the UAE's leadership belief that positions health as a critical component of the sustainability action plan during the conference. In anticipation, the Department of Health – Abu Dhabi (DoH), the regulator of the healthcare sector in the Emirate, and the Abu Dhabi Public Health Centre (ADPHC) showcased their sustainable healthcare projects. Their aim was to highlight the impact of climate change on three critical pillars essential to ensuring the sustainability of healthcare services: the impact of climate change on individuals, the community, and the healthcare system. Both entities hosted a comprehensive 12-day programme focusing on the intersection of healthcare, climate change, and sustainability.

Additionally, local health authorities in Dubai, Sharjah and Northern Emirates are enhancing their roles in reducing the health sector carbon emission by adapting telemedicine in its healthcare pathways. Also, they are working on waste management and efficient energy usage by integrating solar-panels in the hospitals and clinics infrastructure. Those efforts are joined by the private health sector unifying the adaptation and mitigation efforts.

6.2.4 Environment and Biodiversity

The climate crisis is imposing overwhelming pressure on the UAE's already harsh and hyper arid environment. As temperatures increase and extreme events threaten the functioning of the UAE's ecosystems, the country's 2019 Climate Risk Assessment aims to understand the impact of climate change on the country's natural resources, wildlife, and habitats. Acknowledging that loss of biodiversity and ecosystems is a high-risk impact of the climate crisis, the UAE has been working to protect its environment through regulations, the establishment of protected areas, and the promotion of best practices for economic activities reliant on the environment.

The marine environment is also flagged as a high-risk area in need of monitoring and attention. Higher ocean temperatures, and prolonged heat exposure is leading to increased frequency and magnitude of coral bleaching episodes was identified by the 2019 climate risk assessment as a very high-risk priority for the UAE. Coral reefs represent fundamental ecosystems, not only because they are providers of goods and services (e.g., seafood), but also because they serve as protection from storm surges. Currently, 42% of the 66 species of reef building corals in UAE waters are threatened with regional extinction.

Existing Federal Policy Levers and Initiatives

Currently, the UAE's 49 protected areas occupy 15.5% of its total territory. The National Biodiversity Strategy and the National Strategy for Coastal and Marine Environment, along with the UAE's international environmental commitments, have been guiding the country's initiatives in conservation and nature-based climate solutions. The National Biodiversity Strategy lays down a framework to establish a network of protected and effectively managed ecosystems. This has entailed biodiversity surveys, issuance of relevant legislation and guidelines, programmes to plant and protect native trees, initiatives to protect terrestrial, marine, and freshwater fauna, and the designation of new protected areas.

In the marine environment, given the exposure of coral reefs to climate impacts and the increased frequency of coral bleaching events, the UAE has taken significant steps to protect and restore them through monitoring, rehabilitation, and cultivation. The UAE has long been committed to environmental conservation, with habitats, including corals are protected under Federal Law No. 24 of 1999 and has already designated 12% of its territorial waters as marine protected areas with the aim of protecting them from pollution, overfishing and habitat loss. Natural rock barriers and artificial caves are also being installed to recreate natural habitats and breeding grounds for marine species.

The loss of coastal and terrestrial wetlands such as mangrove areas, coral reefs, and inland swamps represents another high-likelihood risk for the country. The UAE has designated ten sites as Wetlands of International Importance, such as the Ras Al Khor Wildlife Sanctuary and the Wadi Wurayah National Park. In some of these wetland areas, sustainable tourism is promoted to generate revenue for conservation efforts. At the same time, citizens are engaged to increase awareness about the importance of wetlands and to encourage their participation in conservation endeavours.

Date palm trees have also been found to offer carbon capture and storage properties and showcase a strong ability to withstand hard environmental conditions. The Arab region boasts around 100 million date palm trees, which can be relied upon to absorb and store carbon. For this reason, following the launch of the International Initiative to Protect the Date Palm Oases under Climate Change Challenges, COP28 witnessed the official launch of Date Palm and Carbon Footprint: A Geospatial Approach to Understanding

the Desert Ecosystems. The compilation of the book illustrates the UAE's efforts to assess and reduce its carbon footprint through afforestation, particularly with date palm trees. The primary goal is to estimate the carbon stock sequestered by date palms using field measurements and geospatial technologies (Remote Sensing - RS and Geographic Information Systems - GIS). The findings highlighted the substantial role of date palms in reducing the UAE's carbon footprint and provide valuable methodologies that can be applied to similar ecosystems globally. It further yields an understanding of the natural environment, providing greater context towards natural resilience, adaptation and preservation under future climatic conditions.

Key Biodiversity Areas are crucial for protecting biodiversity and maintaining ecological stability, which are essential for climate adaptation. In 2023, nine KBAs were designated in Abu Dhabi, Dubai, Sharjah, Ras Al Khaimah, and Umm Al Quwain, covering a total area of 13,660.4 km² and home to 22 globally significant animal species. These areas provide safe habitats that help species adapt to climate changes, support diverse ecosystems, and offer ecosystem services such as water purification, soil stabilization, and carbon storage.

By 2024, the UAE has included three sites—Sir Bu Nair Island, Bu Tinah Island, and Alqurm Protected Area—in the international network of sites important for marine turtles under the Memorandum of Understanding on the Conservation and Management of Marine Turtles and their Habitats of the Indian Ocean and South-East Asia. This network plays a crucial role in adapting to the impacts of climate change on turtle populations by recognizing these sites as critical migration routes and habitats for marine turtles, ensuring their protection and resilience.

Additionally, the UAE's National Desertification Strategy focuses on preventing land degradation and rehabilitating degraded areas to maintain and improve land productivity and ecosystem health. These strategies are vital in fostering resilience against climate change impacts.

These frameworks guide the conservation of biodiversity and sustainable land management, aligning with global efforts under the Convention on Biological Diversity (CBD) Kunming-Montreal Global Biodiversity Framework and the UNFCCC's UAE Consensus. The UAE remains steadfast in its commitment to these initiatives, playing a pivotal role in mitigating climate change and safeguarding biodiversity for future generations.

Non-governmental Organizations in the UAE are also active in the rehabilitation of natural and historic sites, contributing to water resource management, nature conservation and climate adaptation outcomes. Emirates Nature-WWF is implementing a number of initiatives in the mountain regions of the UAE to preserve cultural heritage, restore traditional irrigation practices (falaj channels) and overall improve water resource management as part of enhanced and sustainable local food production. Emirates Nature-WWF projects are implemented in Fujairah in collaboration with Fujairah Crown Prince Office, Fujairah Environmental Authority, and Fujairah Adventure, with the support of Etihad Rail and the local communities; and in Masfout (Ajman) in partnership with the Emirates Council for Rural Development (ECRD), Bupa Foundation, Visa Foundation and Masfout Planning & Municipality Department. Improving water management practices is extremely important for arid and water scarce regions which are estimated to be affected further by climate change, water scarcity and desertification; hence is becoming a prominent strategy within the food-water-climate adaptation nexus. Notably, restoration of water access through these efforts, supports preservation of sites' biodiversity and overall nature rehabilitation.

These efforts are supplemented by continuous water quality monitoring programmes unified under the National Programme for Monitoring and Controlling Marine Water Quality. This programme was introduced to assess the quality of seawater in the country and control marine pollutants by calculating the Marine Water Quality Index (MWQI). The assessment of marine water quality is essential given that its deterioration damages species and their habitats. These efforts are complemented by the ISO-certified Soil Quality Monitoring Programme, established in 2018. This programme plays a vital role in maintaining soil health by detecting degradation and supporting effective land management strategies. Additionally, it underpins the development of evidence-based soil protection policies and ensures their proper implementation, further safeguarding our environmental resources

Emirate Level Policy Levers and Initiatives

Efforts on environmental protection are further mainstreamed at the emirate level. One example is the Abu Dhabi 2030 Urban Structure Framework Plan, which establishes a network of marine and terrestrial protected areas and integrates environmental considerations into all land-use planning. The framework adopts the protection, enhancement, and repair of the natural environment as a fundamental principle of Abu Dhabi's planning and development. Similarly, the Dubai 2040 Urban Master Plan pursues the preservation of the city's natural areas and reserves, which will constitute 60% of the emirate's total area.

Dubai Municipality has achieved a remarkable milestone in tree planting, successfully planting over 185,000 trees at a rate of 500 trees per day over the past year. This accomplishment marks the achievement of 100% of the initiative's target, expanding the total green area in the city by 234 hectares.

Additionally, the establishment of the Dubai Environment and Climate Change Authority represents a strategic initiative aimed at reinforcing the emirate's comprehensive green drive. This new authority will prioritize promoting sustainable practices across various sectors, safeguarding biodiversity, and significantly expanding green spaces and natural reserves. Key objectives include conserving water resources, implementing sustainable waste-management policies, and fostering an eco-friendly urban environment. By focusing on these areas, the Authority will play a crucial role in ensuring the long-term environmental sustainability and resilience of Dubai, aligning with the UAE's broader environmental and climate goals.

Inspired by the UAE Centennial Plan 2071, the Environmental Centennial 2071 is a visionary and ambitious plan for Abu Dhabi over the next 50 years to achieve global environmental leadership. By focusing on conservation, climate resilience, and sustainable development, the plan aims to create a healthy and vibrant environment for future generations through three main strategic pathways and twelve pillars, ensuring a comprehensive approach to environmental conservation and sustainability. Similarly, the Abu Dhabi Climate Change Strategy 2023-2027 presents a robust framework for addressing climate change through adaptation, mitigation, and economic diversification by setting clear targets and fostering innovation.

Moreover, Abu Dhabi has joined an exclusive group of 38 global city governments by implementing the Singapore City Biodiversity Index on Cities' Biodiversity, which functions as a self-assessment tool, allowing cities to benchmark and monitor their biodiversity conservation progress against their own baselines. This updated version of the index aims to guide cities towards a development trajectory where biodiversity and people can coexist harmoniously, addressing biodiversity loss and climate change using the latest scientific advancements from the past decade.

Abu Dhabi achieved an impressive score of 86/100, reflecting the city's significant efforts in conserving urban biodiversity. Key outcomes of Abu Dhabi's application of the index include:

1. Abu Dhabi is the first desert city to apply this self-assessment index, which has predominantly been used by tropical and temperate cities.
2. Abu Dhabi is the first city in the GCC and MENA regions to utilize the Singapore Index, showcasing its leadership in regional biodiversity conservation efforts.
3. The application of the index in Abu Dhabi highlighted certain biases in indicators towards tropical and temperate cities. These indicators will be modified in the future to ensure fair scoring for desert cities, an issue brought to light through Abu Dhabi's pioneering application.

These achievements underscore Abu Dhabi's commitment to urban biodiversity conservation and its role as a leader in sustainable urban development in hyper arid regions.

Abu Dhabi has also launched the Abu Dhabi Mangrove initiative to serve as an umbrella for all efforts, initiatives, and projects related to the conservation, protection and restoration of mangroves and their habitats within the Emirate of Abu Dhabi. with a focus on supporting in climate change mitigation, promoting research and innovation and leveraging partnerships.

Abu Dhabi is at the forefront of coral restoration in the region with its Coral Reef Rehabilitation Programme. This initiative was launched to develop coral nurseries that are populated with the region's most resilient coral species. The programme aims to mitigate the negative impacts of natural pressures on coral reefs, particularly those caused by climate change, such as rising sea temperatures. By fostering the growth of hardy coral species, Abu Dhabi is taking significant steps to preserve and protect its vital marine ecosystems for the future.

Continuing its pursuit of leadership by example, Abu Dhabi is currently developing a comprehensive climate change adaptation plan. This forward-thinking plan will focus on four critical areas: infrastructure, health, energy, and the environment. By addressing these key sectors, Abu Dhabi aims to enhance its resilience to climate change impacts, ensuring sustainable development and the well-being of its citizens. This proactive approach highlights Abu Dhabi's commitment to not only mitigating climate change but also adapting to its inevitable effects, setting a benchmark for other cities in the region and beyond. Annually, the Environment Agency - Abu Dhabi calculates the SDG 15.3.1 indicator, fulfilling the UNCCD commitments by monitoring land degradation and developing comprehensive plans and strategies aimed at achieving land degradation neutrality, thus enhancing efforts to preserve the environment and adapt to climate change

Recognizing the vital role of women in the Fishing and Aquaculture Sector, the Ministry of Climate Change and Environment is actively spearheading an initiative dedicated to empowering women within this industry. This comprehensive initiative includes the creation of dedicated platforms for women to sell fish and aquatic products, thus enhancing their economic opportunities. Additionally, it emphasizes educational and training programmes aimed at building capabilities and expertise among women. A key component of this initiative is the promotion of the "Women Can Fish" programme, designed to inspire and encourage more women to join and thrive in the fishing and aquaculture sector. Through these efforts, the ministry is fostering gender equality and sustainable development within the industry.

6.2.5 Blue Carbon Ecosystems

The UAE is committed to managing coastal ecosystems to yield benefits for both climate mitigation and adaptation. The UAE National Blue Carbon Project has highlighted the significant capacity of mangroves, salt marshes, seagrass meadows, and algal mats to store carbon and serve as barriers against sea level rise. These ecosystems sequester substantial carbon stocks; however, they provide an additional layer of adaptive promise through recreational, biodiversity, and coastal protection benefits.

Protected areas play a significant role in the UAE's adaptation efforts. The number of protected areas increased from 19 in 2010 to 49 in 2023, covering 15.53% of the country's total area, including 17 marine and 32 terrestrial protected areas. The UAE has also increased its Ramsar sites from two in 2010 to ten in 2019. Additionally, the UAE has adopted a goal under its National Biodiversity Strategy and Action Plan to protect 30% of its terrestrial and marine areas by 2030. These protected areas contribute significantly to climate change adaptation by preserving critical habitats that buffer against extreme weather events, maintain water quality, and sustain livelihoods dependent on ecosystem services.

The Mangrove Breakthrough, launched at COP27, is a collaboration between the UN Climate Change High-level Champions and the Global Mangrove Alliance. It sets a science-based, measurable, and achievable goal for non-state actors and governments to collectively restore and protect mangroves. The Mangrove Breakthrough aims to secure the future of 15 million hectares of mangroves globally by 2030 through halting mangrove losses, restoring half of recent mangrove losses, doubling the protection of mangroves globally, and ensuring sustainable long-term finance for all existing mangroves by achieving an investment of USD 4 billion by 2030. The UAE endorsed the Mangrove Breakthrough on the side-lines of the UN General Assembly in September 2023 and has demonstrated commitment through the 100 million mangrove plantation project. The Mangrove Alliance for Climate has a close partnership with the Mangrove Breakthrough, holding a seat on the Mangrove Breakthrough Council and working with its members towards these ambitious goals.

EN-WWF, particularly through its engagements on the project 'Nature based Solutions for Biodiversity, Climate and People,' has undertaken extensive work on blue carbon accounting across key lagoons in the UAE, enhancing available data and knowledge on soil and biomass carbon stocks across key coastal habitats (mangroves, seagrass, saltmarsh, mudflats, sabkha, microbial mats), thus contributing to UAE's national efforts on climate data and MRV facilitating better integration of nature and climate targets and monitoring in the future. The project has also yielded valuable insights that can inform science-based conservation and restoration strategies, particularly highlighting the importance of maintaining connectivity amongst different types of blue carbon habitats and the related need to take an ecosystem-based approach to maximize blue carbon and co-benefits potential. The project has highlighted the importance of coastal lagoons in the UAE as they encompass dense coastal and blue carbon habitats that are highly interconnected and hence play a key role in carbon storage and sequestration, and biodiversity conservation.

Further, EN-WWF is undertaking restoration of mangroves, following a science-led site selection process and delivering a robust approach to restoration which maximizes long-term success. Working in collaboration with MOCCA, EPAA, Ajman Municipality and UAQ Dept of Tourism & Archaeology, and with the support of the local communities, EN-WWF's efforts are contributing to UAE's national mangrove restoration goal. EN-WWF is planning and undertaking long-term monitoring of sites, not only allowing

monitoring and evaluation of the projects at hand but also building knowledge for enhanced design and implementation of future restoration projects. Emirates Nature-WWF has contributed to the development of a guidance document for best practices for mangrove restoration in the UAE led by MOCCA and EAD.

6.2.6 Agriculture and Food Security

In the context of climate change, agriculture and food security have been highlighted as a global priority under the collective understanding that climate bands will begin to shift with time. Agricultural practices must adapt to the projected changes to the natural climate to ensure prosperity in food security, water availability and access to the means to protect the sector. These may include measures to protect existing equipment and practices, or to enhance the current disposition through integration of more climatologically resilient harvests.



Existing Federal Policy Levers and Initiatives

In alignment with the UAE Framework for Global Climate Resilience and building on the Global Goal on Adaptation (GGA), this framework emphasizes a comprehensive approach to enhancing resilience, particularly in the agricultural sector. The UAE has come a long way through national efforts as the National Food Security Strategy 2051 aims to enhance the sustainability and resilience of the agricultural sector by adopting practices that reduce the challenges associated with climate change.

The UAE recognizes the importance of innovation in the agricultural sector, as many local and international initiatives and contributions have been launched to promote the adoption of innovation and

technology in agricultural practices and the food production sector to sustain food systems and make them more resilient.

Innovation in Agriculture

Innovation in agriculture is a key focus. The UAE has been actively investing in cutting-edge technologies and practices to enhance food security, improve sustainability, and increase agricultural productivity. Emirates bio farm is a leading Agtech farm in the UAE, recognized for its commitment to sustainable farming and innovative practices. The farm focuses on organic and hydroponic farming methods to enhance food security and promote environmental sustainability. The application of advanced greenhouse technologies that enables year-round production by optimizing inputs and conditions for represents a significant advancement in sustainable and resilience agricultural practices in the UAE.

In addition to relying on advances in agri-tech, the enhancement of traditional food production and small-scale farming with improved water management, and agro-ecology and circular farming practices, is also a key focus area for the UAE. Innovations in cultivation of native local crops and development of associated value chains, building on traditional knowledge, is critical for the sustainability of local farming in the face of climate change as well as preserving local heritage and building a thriving market for agri-products.

Working closely with farmers in UAE's mountain ecosystems, EN-WWF is innovating new food products that can be derived from native crops such as Arabian Moringa (or Shu'a), which holds significant environmental and economic potential due to its wide range of applications in culinary, cosmetics and medicine. The initiative includes setting up of pilot farms; exploring optimal cultivation methods; and conducting nutritional analysis, and value chain and market assessments. Incorporating moringa into the UAE's agriculture sector not only addresses immediate needs related to water scarcity and soil health but also opens up economic and nutritional opportunities. As the UAE continues to focus on diversifying its agricultural practices and improving sustainability, moringa stands out as a promising candidate for enhancing both agricultural productivity and environmental resilience.

Aim for Climate

The Agriculture Mission for Climate (AIM for Climate) is a joint initiative between the United Arab Emirates and the United States that seeks to address climate change and global hunger by uniting participants to significantly increase investment in, and other support for, climate-smart agriculture and food systems innovation over five years (2021 – 2025). The initiative aligned with the UAE's broader goals of addressing climate change and promoting sustainable agricultural practices. It is part of the UAE's commitment to achieving environmental sustainability and contributing to global climate goals. Adding to the efforts made in launching the initiative, in May 2023, the first AIM for Climate Summit was held in Washington, D.C., as a gathering for all non-government and government partners. The second ministerial meeting was hosted during the Summit, giving partners a platform to share their national developments on climate-smart agriculture. At the AIM for Climate Summit, the Development Innovation Lab at University of Chicago announced the launch of a new Innovation Commission for Climate Change, Food Security and Agriculture dedicated to promoting innovation development and scaling at the intersection of climate change, food security, and agriculture, by announcing that partners have increased investment to more than USD 13 billion, launched 51 innovation sprints, and expanded to more than 500 partners worldwide.

Farmers access to resources and extension services

In the UAE, access to resources and extension services for farmers is crucial for improving agricultural productivity and sustainability. Given the unique challenges posed by the country's hyper arid climate and limited arable land, various initiatives and programmes have been implemented to support farmers. This includes programmes to support the acquisition and use of modern agricultural technologies, including precision farming tools, and controlled environment agriculture systems. In addition to the agricultural extension services which offer on-site technical support and advice to help farmers address specific issues related to crop management, pest control, and soil health.

6.2.7 Culture and Heritage – Culture-Climate Nexus

The integration of cultural heritage into climate action has emerged as a critical and innovative approach, as evidenced by one of the major agreements at COP28: the establishment of a new framework for achieving the Global Goal on Adaptation, which, for the first time, identified cultural heritage as a core theme. The GGA urges nations to protect cultural heritage from climate-related risks by developing adaptive strategies to preserve cultural practices and heritage sites and by designing climate-resilient infrastructure, guided by traditional knowledge, Indigenous Peoples' knowledge, and local knowledge systems. This recognition underscores the significant importance of cultural heritage and cultural rights in climate action. The preservation of cultural heritage is not only a matter of safeguarding history and identity but also a crucial component of building resilient and sustainable communities

The United Arab Emirates, with its rich cultural heritage and vibrant contemporary cultural scene together with a strong commitment to sustainability, is at the forefront of both domestic and international efforts to protect and sustain cultural heritage amidst the growing challenges posed by climate change. The UAE Vision 2031 national agenda underscores the importance of preserving cultural heritage as a foundation for a cohesive society, national identity, and human values. In this realm of cultural heritage, the UAE's efforts reflect a broader commitment to fostering global cultural and environmental resilience, and dedication to harmonizing cultural preservation with climate action, ensuring that invaluable historical treasures are preserved for future generations.

Existing Federal Policy Levers and Initiatives

In 2023, at COP28, the UAE and the Federative Republic of Brazil achieved a historic milestone by announcing the Group of Friends of Culture-Based Climate Action (GFCBCA) at the UNFCCC. This informal coalition of over 50 parties, intergovernmental organizations, and civil society organizations was announced at the first High-Level Ministerial Dialogue on Culture-Based Climate Action on December 8, 2023. A shared commitment to international cooperation in calling for the formal recognition of culture-based climate action in climate change policies was announced through the adoption of the Emirates Declaration on Culture-Based Climate Action underscored the importance of addressing preservation of tangible and intangible cultural heritage from climate change impacts, as well as scaling-up of culture and heritage-based strategies to enhance adaptive capacity and strengthen resilience.

Working in parallel with the UAE Framework for Global Climate Resilience, GFCBCA calls science-backed and evidence-based case for the formal recognition of culture-based climate action by the UNFCCC starting with national efforts to identify and measure the cultural sector's contribution to climate change

adaptation. Based on the belief that the cultural sector holds unique potential to drive climate action through its influence on public perception, behaviour, and policy, the Ministry of Culture has initiated study for making recommendations for enhancing the role of the cultural sector in addressing climate change in the UAE. This national study on culture-based climate action in the UAE that lays the foundation for reporting on culture-based climate action in our NDCs and NAPs. The primary objectives of this study include mapping the current state of climate-related initiatives within the UAE cultural sector; assessing the awareness, attitudes, and practices of cultural organizations and stakeholders regarding climate action, and identifying opportunities and barriers for integrating climate action into cultural policies and practices.

In 2017, the International Alliance for the Protection of Heritage in Conflict Areas (ALIPH) was established through a collaboration between the Republic of France and the UAE with the aim of protecting cultural heritage in conflict and post-conflict areas. Based on the introduction of a secondary focus of adapting to adverse effects of climate change and natural disasters on cultural heritage at the March 2023 ALIPH Forum in Abu Dhabi, ALIPH adopted a multi-year strategy aimed at safeguarding both tangible and intangible cultural heritage endangered by climate disruption in vulnerable countries.

In line with this strategy, the UAE helped drive the ALIPH initiative to launch a USD 10 million call for projects for 2024-2025 to support practical, field-based projects focused on the protection and rehabilitation of cultural heritage with capacity-building efforts for local professionals and promote applied research, including the advancement and transfer of traditional knowledge, with an emphasis on the African continent. With a financial contribution of USD 350,000 from the UAE, the project aims to stabilize the buildings, consolidate the decorations, build capacity for local professionals, and implement a monitoring system to quickly identify any future threats.

The UAE has amplified its role in African heritage preservation by signing an MoU with the African World Heritage Fund (AWHF) and committing USD 1,000,000 towards sustainable conservation efforts. A key project under this initiative focuses on Lake Malawi National Park. This significant natural and cultural site faces threats from climate change, impacting biodiversity and local community livelihoods. The UAE interventions, in collaboration with the Ripple Africa Fish Conservation Project, included sustainable fishery practices to maintain biodiversity and community education on climate adaptation and sustainable livelihood practices.

Recognizing the vital role of the younger generation in climate action and heritage conservation, the UAE facilitated the Seventh African World Heritage Youth Forum. A platform that nurtured the skills of young African professionals, through training to enhance practical heritage preservation skills and advocacy for integrating climate action into heritage conservation strategies, thereby fostering a new generation dedicated to protecting cultural and natural assets.

Existing Emirate Level Policy Levers and Initiatives

Efforts to integrate cultural and heritage considerations into climate action are increasingly being mainstreamed at the emirate level. A notable example is the Culture and Heritage Sustainability Guidelines developed by the Department of Culture and Tourism – Abu Dhabi. These guidelines are meticulously aligned with the UN's Sustainable Development Goals (SDGs) and aim to enhance sustainability across various dimensions, with a strong emphasis on promoting local heritage, engaging the community, and improving accessibility.

In line with this commitment, the Dubai 2040 Urban Master Plan underscores the emirate's dedication to sustainability, with a significant focus on cultural sustainability. This involves the preservation of historical buildings and heritage areas through maintenance, restoration, and protection. The plan prioritizes the optimal utilization of natural resources and infrastructure, aiming to preserve heritage sites, monuments, and cultural areas for future generations, thus maintaining the authenticity and values that have enriched the region.

The Emirates Centre for Strategic Studies and Research has published a book titled "The Emirati Approach to Sustainability and Climate Action," detailing the principles of sustainable development and climate action within Emirati thought. It outlines the sustainability embedded in the cultural and historical heritage of Emirati society and traces its evolution to the present day, highlighting the ongoing commitment to these values.

Existing International Level Support Systems and Initiatives

The UAE's commitment to integrating culture and climate action extends to the international stage. At UNESCO, the UAE submitted a resolution titled "Strengthening the Role of Culture and Education for Climate Action and Resilience," which was adopted by the UNESCO Executive Board in 2023. This resolution calls for Member States and UNESCO to harness opportunities for exchanges on best practices that contribute to climate action and strengthen the fundamental role of education and culture in the fight against climate change. The resolution was co-sponsored and supported by 60 Member States.

The resolution also emphasizes the need for international cooperation on education and culture to address climate change, recognizing their key contribution to achieving the goals of the UNFCCC, the Paris Agreement, and the 2030 Agenda for Sustainable Development. It highlights the importance of engaging youth, culture professionals, and educators as agents of change. Furthermore, it acknowledges that the impact of climate change on cultural heritage is not only physical but also social and economic, affecting livelihoods and opportunities in the cultural and creative industries.

The resolution encourages Member States to join the UNESCO Greening Education Partnership (GEP) initiative, which aims to mobilize the global education community and deliver comprehensive action to prepare learners to tackle climate change and promote sustainable development. It also considers the need to transform the energy sector for climate action, highlighting the support of the International Renewable Energy Agency (IRENA) in addressing renewable energy education and knowledge gaps.

The UAE supports UNESCO's flagship initiatives such as "Revive the Spirit of Mosul," launched in 2018 to rebuild Mosul. The UAE has contributed USD 50 million to this initiative, supporting the restoration of iconic landmarks such as the Al-Nouri Mosque, Al-Hadba Minaret, Al-Tahera Church, and Al-Saa Church. The project emphasizes sustainable reconstruction practices, using environmentally friendly materials and techniques, renewable energy sources like solar panels, and locally sourced materials to promote sustainability and support local economies.

This initiative aligns with UNESCO's "Global Research and Action Agenda on Culture, Heritage, and Climate Change," underscoring the importance of cultural heritage in climate adaptation and mitigation. The project demonstrates the value of preserving traditional knowledge and practices, integral to sustainable development and environmental stewardship, and supports UNESCO's updated Policy Document on Climate Action for World Heritage, protecting cultural heritage in the face of climate change challenges.

6.3 Insurance

Investment opportunities in mitigation and adaptation actions are reshaping the relevance of the insurance sector to the transition towards a sustainable economy. Climate risk insurance can contribute to adaptation efforts by increasing savings, establishing more comprehensive risk management, and improving financial liquidity, thereby enabling more rapid recovery after climate disasters. The UAE recognizes that risk management approaches and insurance represent crucial action areas, as recommended by the Warsaw International Mechanism (WIM) and the Sendai Framework for Disaster Risk Reduction 2015-2030.

Existing Federal Policy Levers and Initiatives

To expand the scope of adaptation efforts in the UAE, the National Climate Change Adaptation Programme introduced an assessment of climate-related risks in the insurance sector. This initiative aims to evaluate industry awareness of climate change impacts and provide recommendations on how insurance companies can incorporate climate-related risks into their business operations, investments, and projects. As the regulatory body for the insurance sector, the Central Bank of the United Arab Emirates (CBUAE) collaborates with industry stakeholders to explore emerging threats and challenges from climate change. The short- and medium-term risks identified include increasing costs and losses in investments associated with more frequent natural disasters.

The CBUAE is also raising awareness among insurance professionals through consultative surveys, workshops, and guiding principles on sustainable finance practices. Sustainability is central to the CBUAE's mandate of ensuring financial stability and fostering a competitive financial system in the UAE. To contribute to the UAE's sustainability strategy, the CBUAE is committed to developing a resilient financial sector by ensuring that climate-related risks are appropriately managed by Licensed Financial Institutions (LFIs).

In 2023, the high-level Committee on Green and Sustainable Finance oversaw various sustainable finance initiatives by the CBUAE. During Finance Day at COP28, the Central Bank of the UAE announced a landmark commitment from the UAE banking sector to collectively mobilize AED 1 trillion in sustainable finance by 2030. This commitment advances the UAE's sustainable finance ambitions and lays the groundwork for sustainable transformation and climate action.

The CBUAE also highlighted the critical role of digitalization and advanced technological innovation in driving global climate action and sustainable finance. The COP28 UAE TechSprint, a global initiative promoting technology innovation in scaling sustainable finance, showcased solutions in partnership with the COP28 Presidency, the Bank for International Settlements (BIS), and the Emirates Institute of Finance (EIF). This initiative attracted 126 proposals from 31 countries, focusing on advanced technologies such as artificial intelligence, distributed ledger technology, the Internet of Things (IoT), and sensory technologies applied to sustainable finance.

Moreover in 2023, the CBUAE evaluated the impact of climate transition risk on corporate lending by UAE banks to vulnerable sectors. A pilot bottom-up climate risk stress test analysed the effects on the banking sector by examining the top 20 largest corporate borrowers from these vulnerable sectors, using NGFS climate scenarios. The impact was measured through risk metrics such as the probability of default and loss given default.

To enhance the regulatory framework for managing climate change risk in the financial sector, the CBUAE introduced the new Principles for the Effective Management of Climate-Related Financial Risks at the end of 2023. Developed in collaboration with the UAE Sustainable Finance Working Group (SFWG), these principles aim to raise standards in identifying, managing, and mitigating climate-related financial risks. The regulatory framework within the insurance sector is dynamic and continually evolving to ensure compliance with the International Association of Insurance Supervisors (IAIS) and global standards.

Furthermore, the SFWG finalized the 'Principles for Sustainability-Related Disclosures for Reporting Entities,' which emphasize enhanced transparency and quality of reporting on environmental, social, and governance matters. A summary of high-level design principles was also prepared to inform the development of the UAE sustainable finance taxonomy, aiming to improve market clarity, identify green investment opportunities, and provide the industry with business and investment opportunities for sustainable economic growth.

7. Implementation and Enablers – Closing the Gaps

7.1 Financial and non-financial requirements

Achieving the UAE's climate targets and accelerating the transition towards a low-carbon and sustainable economy will require significant investments across sectors, including in infrastructure, and funding for new technologies. As part of the UAE Net Zero 2050 Strategic Initiative, the nation conducted a thorough assessment of funding needs, and the updates based on this NDC will be communicated in the second iteration of the LTS.

The UAE is creating policies to deliver the financing required to make climate action an attractive investment opportunity. For example, it is setting power purchase agreements (PPAs) to ensure a competitive power market for international and private investments. By positioning itself as an attractive destination for foreign direct investment (FDI), the UAE is supporting its economy while decreasing its reliance of governmental support and public investments.

Similarly, the government aims to create investable opportunities in the industrial and buildings sectors. Large-scale infrastructure projects will be financed through public-private partnerships (PPPs) to optimise cost efficiencies and risk management. In addition, public funds will be used to subsidise or fully finance investments.

The UAE is already taking action and has launched a series of sustainable finance efforts to effectively channel investments and ultimately build a competitive green economy. One of the three sub-programs of the UAE Green Agenda 2015-2030 is the Green Finance and Investment Support Scheme, which is intended to include the development of domestic green finance models and products, such as energy performance contracts (EPC), public finance initiatives (PFI) and green sukuk. In 2021, the UAE Sustainable Finance Framework 2021-2031 was introduced to guide stakeholders towards the mobilisation of private capital for sustainable and green investments and to promote sustainability in financial decision-making.

7.2 Technological and Innovation Requirements

Technology plays a major role in our journey towards Net Zero by 2050. Therefore, the Ministry of Industry and Advanced Technology in partnership with ADNOC and Abu Dhabi Future Energy Company (Masdar), held the UAE Climate Technology Forum in 2023 with the participation of more than 50 technology companies in response to the urgent need to decarbonize at scale and deliver climate action while enabling socio-economic growth.

Additionally, in 2023, MoIAT introduced the “Make it in the Emirates Start-up Competition”, which brought together local and international technology start-ups that have the potential to drive the decarbonization and digitalization of industry to pitch their ideas to investors and industry players. The competition also provided the start-ups with the opportunity to further develop and deploy their technologies in the UAE in collaboration with various industry partners, some of which expressed interest to explore potential use-cases for pilot projects. In 2024, the second edition was launched including two categories and subsectors, each representing different approaches to addressing industry-specific challenges, one of which was decarbonization and that included categories like renewable energy, artificial intelligence and digitalization for decarbonization, as well as carbon capture and storage. The winners receive monetary awards and are exposed to unique networking opportunities with investors and potential technology off takers. The “Innovate for Climate-Tech (I4C)” initiative of COP28 housed in the Global Climate Finance Centre will support development and adoption of climate tech solutions in collaboration with UAE industry champions.

The Industrial Decarbonization Roadmap, further elaborated in the industry section, evaluated over 50 decarbonization methods, technologies and innovative solutions to achieve these ambitious targets, with key ones listed below:

- Clean Electricity: Transitioning to clean and renewable energy sources.
- Carbon Capture, Utilization, and Storage: Using technologies for capturing, utilizing and storing CO₂ emissions.
- Manufacturing Efficiency: Improving industrial processes to reduce waste and emissions.
- Alternative Fuels: Utilizing low-carbon fuels.
- Recycling: Enhancing recycling processes to minimize waste.
- Clinker Substitutes: Using alternative materials in cement production.
- Hydrogen: Adopting hydrogen as a clean energy source.

The International Holding Company of the UAE has announced the establishment of the world's first climate company, Smart Sustainability Solutions (S3). S3 is dedicated to deploying industrial-scale decarbonization and circular economy solutions in heavy industry and energy infrastructures. Its mandate is to develop and invest in projects aimed at reducing emissions, enhancing energy and water efficiency, and commoditizing energy or other waste in collaboration with business owners and operators, such as utility companies, chemical industries, and cement producers. S3 focuses on scaling up proven technologies from third parties and developing business models to introduce these technologies, while assuming the associated implementation and business risks. The company operates across four business verticals: Methane, Carbon, Circularity, and Water.

ADNOC is partnering with global technology and AI players and growing the UAE innovation ecosystem to deliver a project portfolio focused on return on investment and solving real business challenges. AI plays a crucial role in ADNOC's strategy to advance the energy transition. By deploying AI solutions in 2023, AI tools generated \$500 million (AED1.84 billion) in value. The value was generated from the integration of over 30 industry-leading AI tools across ADNOC's entire value chain, allowing for smarter and faster data-driven decision-making. Together, these applications have helped abate up to 1 million tons of CO2 emissions between 2022 and 2023.

Similarly, the UAE launched the EARTH platform, designed to advance five key domains—Economy, Adaptation, Reduction, Transition, and Health—by providing an integrated, UAE-wide digital dashboard for comprehensive assessment and monitoring of net-zero activities. It facilitates data-driven decision-making by offering accurate, real-time data analysis, aligning with the UAE's strategic goals of sustainable development and a circular economy. Leveraging advanced technologies such as AI and Big Data, the platform supports the UAE's efforts toward achieving its 2050 net-zero emissions target while showcasing leadership in global sustainability.

7.3 Capacity Building Requirements

To attain its mitigation and adaptation objectives, the UAE will further develop its human resources and capabilities and empower its citizens to tackle climate change. The UAE's Net Zero Strategy plans to create an average of 160,000 jobs annually between 2025 and 2050 and seeks to future-proof an additional 40,000. Appropriate upskilling and capability building are needed to maximize local employment and the job creation opportunities that the climate transition presents. The implementation of the plan includes preparing the UAE's workforce to leverage the opportunities arising from the new green economy, mobilizing relevant stakeholders in climate action, building their capacity, and raising awareness about climate change. The UAE is focusing on enhancing its capabilities to design, implement, enforce, and monitor effective policies and regulations to achieve the objectives set forth in this NDC.

Capability Building for Government and Private Sector

Following the successful establishment of the UAE Climate Change Research Network (CCRN), a platform that facilitates collaboration among scientists and researchers to enhance the gathering of climate-related information and conduct policy research on the effects of climate change and methods of adaptation. The head scientist as the cluster lead of the Climate Change & Terrestrial, Marine & Freshwater Ecosystems cluster, published A Natural History of the Emirates book. The book provides a comprehensive overview of the unusual environmental setting of the United Arab Emirates and surveys the major ecosystems and the marine and terrestrial organisms occurring across the nation. In addition, in recent years, the UAE witnessed a surge interest in research and development which resulted in the emergence of various research centres.

In 2023 MoIAT launched Make It In The Emirates award as a program under MIITE yearly Forum, recognizing excellence and innovation in the industrial sector. It celebrates the pioneers, visionaries, and game-changers that are shaping the future of industry in the UAE and beyond, in addition, it supports the UAE's transformation to becoming a global hub for manufacturing and innovation.

The prestigious awards (10 categories) fall under Make it in the Emirates— a national initiative that invites investors, industrialists, and innovators to set up operations in the UAE. It recognizes individuals and

entities which have significantly contributed to the advancement of the UAE's industrial sector, offering participants an opportunity to showcase their innovations and achievements.

One of the main award categories is 'Sustainable Manufacturing Award' in which recognizes companies that have made exceptional efforts towards adopting sustainable best practices, demonstrating a commitment to minimizing their environmental footprint through innovative methods for material reclamation and end-of-life disposal strategies. The award also acknowledges companies that have established meaningful metrics to track and improve sustainable practices, as well as those actively engaged with their suppliers and partners to promote sustainable development across supply chains.

The Fujairah research centre plays a central role in the Emirate of Fujairah's vision and alignment to the UAE innovation strategy 2071. The Centre is focused on applied research and technology innovation for desert and tropical areas and encompasses environmental, genetic, and marine studies.

Similarly, the Mubadala Arabian Centre for Climate and Environmental Sciences (ACCESS) is a leading research centre on the climate and the environment of the Arabian Peninsula and the Gulf region. It will bring scientific research on local and regional climate change and environment up to speed with the rapid development of the societies and economies that dwell in the region. Currently they are building observational and modelling capacity in the marine and atmospheric sector, integrating the multidisciplinary competencies present within New York University Abu Dhabi and the New York University Global Network.

As part of Emiratization efforts Emirates Nuclear Energy Corporation's (ENEC) joint venture operating and maintenance subsidiary Nawah Energy Company (Nawah), has announced its first Diploma in Nuclear Technology (DNT) to equip the next generation of climate change leaders with the skills and training needed to work at the Barakah Nuclear Energy Plant. The DNT is a 24-month, entry level programme for high-performing students. The programme is aimed to encourage, support and nurture the next generation of UAE Nationals to discover and pursue a career as nuclear professionals.

Following the country's directive vision with building a diversified and flexible economy based on innovation and knowledge, the National Research and Development Leadership Programme seeks to empower exceptional local talent with hands-on experience to enhance the impact of a diverse range of research and development (R&D) projects and foster innovation across the nation. The programme is tailored to meet the specific needs of the UAE's R&D ecosystem and comprises of selected modules that encompass the entirety of the research and development journey. It brings together 22 carefully selected UAE nationals based on their roles in R&D management across 20 entities from the public, private and academic sectors.

Following the success of the Jahiz initiative, The Federal Authority for Government Human Resources (FAHR) launched the second edition of "Jahiz" Platform, the largest and most comprehensive national initiative for future skills in the UAE, within the activities of the "Government Talent Readiness for the Future" Forum. The initiative achieved more than one million hours of enhancing future skills, accomplished by more than 53,000 participants.

Educators play a crucial role in shaping the future workforce and preparing them to face the challenges of a rapidly changing economy. As such, numerous capacity building programmes target educators and their role in raising awareness about climate change, promoting sustainable practices and equipping

students with the skills to succeed in the green economy. To support teachers and policy makers in the integration of climate education in pre-service and in-service teacher training, the UAE government, in collaboration with UNICEF, will train around 3000 master trainers and 1500 principals across the country. This will allow 100% of the private and public schools to cover, in the implementation of cross curriculum and extra-curriculum activities guidelines for the academic year starting September 2023. To highlight to global politicians and decision-makers the work of educators, the challenges they face, and the key role they play in the global climate response, the Teachers COP brought voices of primary and secondary teachers as well as school directors to COP28. This global competition garnered substantial interest with over 386 teachers, school principals, inspectors, and other educational stakeholders submitting projects on climate change education.

In addition, recently the UAE approved a new framework for classifying higher education institutions across the UAE, encompassing both public and private institutions. They are set to reveal the national classification results for over 70 institutions, assessing them based on quality of education, the labour market's demand for their graduates, their research prowess, and their global academic affiliations. The national classification is a milestone in elevating the calibre of the country's higher education and advancing transparency, thereby empowering youth to make informed decisions for their futures.

Manzily Energy Advice Service, launched in 2023, provides free energy advice for homeowners. Homeowners can benefit from a quick assessment of opportunities for home improvements, such as energy and water savings, improved indoor air quality and thermal comfort. The assessment is conducted by an expert nominated by Ras Al Khaimah Municipality, while a database of suppliers and contractors supports the implementation of recommendations. Since its launch, over 100 homeowners have benefited from the service. RAK Municipality has also partnered with Etihad Water and Electricity (EtihadWE) to provide monetary incentives to residents that participate in the Manzily Energy Advice Service and achieve electricity savings. Under this partnership, EtihadWE is providing AED 1 credit for every AED saved in homes of UAE nationals enrolled in the service.

The UAE is committed to integrating sustainability and climate action into its educational systems. Over the past years, numerous programmes, competitions, and collaborations have been established to promote environmental awareness and sustainable development among students and the broader community. 140 programmes across 28 organizations has been implemented, emphasizing environmental sustainability. Notable initiatives include ecopreneurship competitions in partnership with Al Tamimi Company and Al Ghurair Foundation, which received 1095 applications and shortlisted over 150 projects. These competitions awarded grants to encourage innovative solutions for sustainable development.

The Ministry of Education has developed a comprehensive Sustainable Learning Toolkit, integrating a cross-curricular framework for environmental sustainability. This toolkit includes resources and implementation guides for curriculum developers, teachers, and principals, ensuring alignment with the Environmental Sustainability Framework. In August 2023, all public schools have mapped their instructional planners to the Environmental Sustainability Learning Outcomes, facilitating the integration of sustainability across all subjects.

Moreover, in preparation for COP28, the UAE launched a series of lessons focusing on the Sustainable Development Goals (SDGs) and climate change. These lessons involved interactive activities, surveys to gauge students' understanding, and interactions with distinguished sustainability ambassadors. The

initiative aimed to inspire students to pledge for change and engage in sustainable actions, creating a lasting impact beyond the classroom.

The UAE is developing an open educational resource (OER) library to support global sustainability efforts. This platform will allow public access to download and upload resources, enabling teachers to share reviews and students to register and document their actions. The initiative aims to demonstrate the global impact of local actions by creating a map showing sustainability efforts worldwide.

Additionally, The UAE's Green Education Framework encompasses four domains: Energy, The Earth's Biosphere, Resource Consumption, and Climate Action and Innovation for Sustainability. This framework promotes a holistic approach to learning, focusing on knowledge, skills, and values essential for sustainable development. It encourages schools to adopt eco-friendly practices, engage in community-based projects, and participate in national sustainability initiatives.

As part of the Greening Education Partnership introduced by UNESCO, the UAE is committed to enhancing climate education globally. The country has called for international collaboration to develop a global sustainability tracking tool for educational institutions. This tool will help assess the carbon footprints of schools and universities, facilitating evidence-based recommendations for reducing emissions.

The UAE's dedication to sustainability is reflected in its commitment to integrating climate education into its curricula, promoting green skills among youth, and fostering a culture of sustainability within the broader community. By leveraging international partnerships and innovative educational frameworks, the UAE aims to make significant strides in combating climate change and achieving its national goals.

At the emirate level, the Environmental Agency – Abu Dhabi hosted the prestigious 12th World Environmental Education Congress. This significant event featured an impressive 310 sessions, engaging 337 speakers, including 79 youth speakers, and dedicated 40 sessions specifically for youth. The Congress successfully attracted 3,131 attendees, with a notable representation of 761 youth delegates. This gathering culminated in the development of the Abu Dhabi Roadmap for Environmental Education and Education for Sustainable Development, charting a clear course for future educational initiatives and sustainability efforts in the region.

Under the Sustainable Campus Initiative (SCI), a series of impactful activities were conducted to promote climate change awareness and education. This initiative included the publication of 15 podcast episodes focused on climate change, which garnered an impressive audience of over 1,338 listeners. Additionally, 25 environmental sessions related to climate change were held, attracting 1,330 attendees who actively engaged in these informative events. The SCI initiative is a collaborative effort that encompasses 26 universities and colleges, demonstrating a robust commitment to fostering environmental stewardship and sustainability within the academic community.

Moreover, Abu Dhabi is actively championing efforts to reduce carbon footprints across schools, universities, and the broader community. The Green Audit and Sustainable Schools Programme has made remarkable progress in promoting environmental awareness and sustainable practices within the educational sector. This year, the programme engaged 562 SIS schools, receiving a substantial 366 reports from 107 participating schools. Impressively, 46 schools achieved a Green Rating of 70-100%, demonstrating their exceptional commitment to sustainability.

Looking ahead, the programme has outlined several key initiatives for the upcoming year:

- **Launching an Enhanced EEMS System and Website:** This initiative aims to provide better resources and support for schools, enhancing their ability to implement and monitor sustainability practices.
- **Implementing a Comprehensive Plan for School Activities:** This plan will further integrate sustainability into the curriculum, ensuring that environmental education is a core component of student learning.
- **Organizing the Tide Turner Challenge:** This challenge will motivate students to take actionable steps towards environmental conservation, fostering a hands-on approach to learning about sustainability.
- **Hosting an Art Competition:** In conjunction with the 1st International Mangrove Conservation and Restoration Conference, this competition aims to raise awareness about the importance of mangroves and encourage creative expression of environmental themes.
- **Releasing the SSI Report:** This report will share insights and progress on the programme's impact, highlighting successes and areas for improvement.

These efforts collectively aim to foster a culture of sustainability within schools, encouraging students and educators to adopt and promote environmentally friendly practices. By supporting such initiatives, Abu Dhabi is setting a strong example of how educational institutions can play a pivotal role in the fight against climate change.

Additionally, Abu Dhabi's outreach initiatives encompass a wide range of programmes aimed at promoting environmental sustainability and community participation. The Sahim Citizen Science Clean-Ups, launched by the Environment Agency – Abu Dhabi and Emirates Nature-WWF, encourage public involvement in addressing environmental issues like climate change and waste management through data collection and monitoring. The BAADR App incentivizes users to reduce their carbon emissions by rewarding them for completing sustainable actions. The Sustainable Schools Initiative (SSI) and the Sustainable Campus Initiative empower students and youth to adopt eco-friendly practices and reduce their ecological footprints. The Green Business Network fosters dialogue and action among businesses to implement responsible and sustainable practices, while e-GREEN, the first e-learning platform dedicated to the environmental sector, offers global courses on climate change. Additionally, the EnvirosPELLathon programme enhances eco-literacy among students, and the Naturally Educated Podcast broadcasts environmental knowledge, raising awareness on critical issues like biodiversity loss and sustainability.

Ras Al Khaimah, supports the involvement and participation of the industrial, commercial and public sectors in environmental awareness and rewards their efforts in reducing their environmental footprint. The Ecolabel Certification program, launched in 2023, encourages stakeholders to put environmental sustainability in all aspects of their operations and products through a detailed evaluation of their operations.

Furthermore, to address the training needs of professionals in Ras Al Khaimah, Upskill, a training programme, with over 40 courses, on the topics of energy efficiency and renewable, was launched in 2021. It offers recognised certifications and training for different career types and levels.

National capability building efforts must also address private organisations. The UAE MOCCA, in collaboration with EN-WWF, developed a series of workshops to increase the private sector's capacity in climate action. These workshops were aimed at raising awareness and developing knowledge about estimating carbon footprints.

The UAE Alliance for Climate Action (UACA), convened by EN-WWF, is an alliance of stakeholders that aims to increase momentum towards Paris Agreement aligned mitigation targets amongst non-state actors and to facilitate greater collaboration. In addition to promoting and facilitating greater climate ambition, the Alliance - a strong collective of 52 members - is building capacity across private and public NSAs through targeted initiatives and digital innovations. These initiatives are addressing key knowledge/action gaps in areas such as emissions measurement, target setting, energy efficiency, decentralized clean energy solutions and sustainable road transport. The Alliance's focus remains on bolstering UAE's progress towards its net zero 2050 target and on implementation of members' commitments.

The EN-WWF's Leaders of Change mission is helping corporations and government employees upskill themselves to support sustainable development and the internal transformation of their organisations on their road to decarbonization and sustainability.

One example of a community-centric capacity building initiative is 'Sahim', a comprehensive citizen science initiative that allows the public to participate in scientific environmental research. Launched by EAD and Emirates Nature-WWF, Sahim enables people of all ages to become citizen scientists, gathering data about local species and habitats thus contributing to conservation research and, ultimately, to policies and action.

Sustainability was also a key theme at Expo 2020 Dubai and was embedded holistically across the site and its programming. To enable Expo's facility managers, and partners to understand and contribute to the responsible use of resources, multiple awareness campaigns, trainings and educational activities about various environmental issues were conducted. Moreover, Expo 2020 was the first limited-duration event of its kind to develop a standardised methodology to estimate its carbon footprint and monitor its emissions. This is a first in the organisation and development of mega-events and is particularly relevant given the number of events of this scale taking place in the UAE, including COP28, which was held at the Expo site.

Capability Building for Civil Society

In addition, the UAE recognises that the climate transition requires behavioural change from all members of society. For this reason, the government is conducting several awareness-raising campaigns, both at the national and at the local level. At the federal level, the UAE launched a campaign to investigate the awareness and behaviour of the UAE population towards electricity and water conservation. The results coming from this study were used to plan a new national campaign on conservation consisting of awareness and educational activities and programmes tailored to the needs of different segments of society, namely students, families, employees, workers, and tourists.

With the aim of empowering all members of society in climate action, the UAE is also in the process of developing its Action for Climate Empowerment (ACE) framework, in line with Article 6 of the UN Framework Convention on Climate Change and Article 12 of the Paris Agreement. The ACE is an invitation

for countries to develop educational and public awareness programmes, train scientific, technical, and managerial employees, facilitate public access to information, and encourage public involvement and international cooperation in tackling climate change and its effects.

At the emirate level, Sharjah electricity and water authority has been conducting its Peak Hour Campaign and Rationalization Hour initiative for more than seven years. In 2020, over 150 entities and organizations in addition to community members participated in the initiative, which saved 34 MW and over 20.4 tonnes of carbon emissions.

In Dubai, DEWA PJSC launched the Smart Living Initiative which enables customers to monitor their water and electricity consumption digitally and proactively without needing to contact DEWA PJSC. It is supported by a campaign to raise awareness and promote sustainable consumption practices. In Abu Dhabi, a detailed guide on how to plant and irrigate gardens efficiently was rolled out to enhance irrigation methods and demonstrate their benefits. In 2022, the emirate of Ras Al Khaimah also organised the first edition of the RAK Energy Summit, a platform promoting international climate cooperation through dialogue within the industry. Raising public awareness is also a critical objective, achieved through the continuous execution of Energy Saving Tips, a campaign focused on the importance of improving behaviour, using efficient appliances and understanding energy and water savings.

The Abu Dhabi Sustainability Week (ADSW) and the Water, Energy, Technology, and Environment Exhibition (WETEX) and the Dubai Solar Show are internationally known, global platforms that invite policy makers, business executives and the general public to discuss strategies and solutions for a net zero future in a series of workshops.

Among Expo City Dubai's sustainability focus areas, raising public awareness was a key objective. A major enabler of this was the Sustainability Pavilion, a net zero water and energy building offering an immersive journey to educate visitors about their role in tackling the climate crisis. The Sustainability Pavilion, also known as Terra, has been repurposed to host interactive educational experiences since the closing of Expo 2020. These included Theme Weeks addressing global challenges such as biodiversity, food, and agriculture — but also other initiatives — such as World Majilis which spark global dialogue and inspire new perspectives through public conversations, interactive science shows, as well as educational workshops introducing school groups to concepts such as the protection of animal habitats, water conservation, and waste management.

7.4 Women and Youth

Inclusivity and empowerment are fundamental to the UAE climate agenda. Protecting and enabling vulnerable groups, such as women, youth, children, and people of determination, is a key priority. The strategies and policies outlined in this NDC, and the UAE's climate plans reflect the perspectives and inputs of these stakeholders. Representatives of women, youth, and people of determination were actively involved, making them essential contributors to achieving the UAE's ambitious climate goals. To this end, the UAE has introduced various initiatives to engage these stakeholders in its climate action efforts.

A significant focus has been placed on raising awareness about the climate crisis among younger generations. Building on previous national strategies for youth empowerment, the 2023 National Youth Agenda 2031 aims to solidify the belief that the true wealth of a nation lies in its youth. This agenda seeks

to empower young Emiratis to be role models both regionally and globally, increasing their contributions to economic and social development.

The Agenda focuses on five key pillars: economic empowerment, scientific skill development, national identity consolidation, community contributions, and international representation. It aims to qualify over 100 young Emiratis to represent the country in global organizations and forums related to national priority sectors and to ensure 100% suitable career pathways for youth in the labour market.

The National Youth Agenda 2031 aspires to place the UAE among the top 10 countries globally for youth quality of life. It aims to enhance national consciousness among youth, ensuring that Emirati youth take pride in their identity and national affiliation. The Agenda also seeks to make the UAE the easiest country for young people to access basic services and to double the number of youth projects in promising and future sectors. Additionally, it plans to increase the number of young Emiratis obtaining academic and vocational qualifications suited to future skills and labour market needs and to launch an honorary medal for elite youth.

The Arab Youth Centre has been a pioneer in youth advocacy locally, regionally, and globally, significantly contributing to youth empowerment in climate action and awareness. Through its climate-focused, youth-led initiative, the Arab Youth Council for Climate Change (AYCCC), the Centre supports youth climate action and engages young Arabs in developing innovative and sustainable solutions to the climate change challenge. AYCCC provides capacity-building opportunities and raises awareness, bridging the gap between youth and decision-makers to promote a more inclusive and effective climate governance framework.

Recently, the Centre launched its second cohort for 2024–2026, featuring 12 distinguished council members from 10 Arab countries, including 5 women and 7 men. This cohort will undergo rigorous training and propose their projects to empower youth toward climate action.

Ahead of COP28, the Arab Youth Centre supported the Conference of the Youth (COY18), which hosted and trained 800 youth from around the world. The conference provided free meals, transport, visa, accommodation, and flight support, engaging 79 global partners. Seventy percent of its sessions were youth-led, including sessions empowering people of determination in the climate field. COY18 also included a COP Children Simulation by UNICEF and Save the Children, targeting children aged 12–18, producing a document of their recommendations. The event was officially endorsed by the UN Secretary General's Envoy on Youth, COP28's Presidency, and the UNFCCC's Executive Secretary. COY18's Global Youth Statement compiled a record 750,000 inputs from youth globally.

Recognizing that the younger generation will bear the burden of the climate crisis, the UAE government has

initiated a series of initiatives to support youth in the climate field. Children were also given the opportunity to participate in the journey towards a net-zero future through the ADNOC STEM for Life Advancing Towards Net Zero Schools Challenge. This challenge, targeting students in cycles 1-3, encouraged students to design solutions to help their schools move towards net

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zero. The initiative received over 1,800 submissions, engaged more than 10,500 students, 341 schools, and 250 teachers, and culminated in 33 finalists.

Several initiatives are championed by youth themselves. For example, students from New York University – Abu Dhabi ambitiously bid to host the Student Energy Summit (SES) 2023 and won, bringing the summit to the Middle East, specifically to Abu Dhabi and Dubai, for the first time. The summit coincided with COP28 and gathered more than 700 international delegates, 55% of whom were female, along with young leaders and energy sector experts from over 130 countries to "Reimagine the Future." This event marked the world's largest youth-led conference on energy transition and the largest independently organized youth-led event in the UAE and the wider GCC region.

The summit provided a transformative space for young people to collaborate on energy solutions with industry leaders, engaging over 20,000 young people in virtual and in-person capacity-building and digital engagement sessions leading up to SES 2023. It offered young people opportunities to accelerate their careers and ventures in the energy sector and connect with decision-makers to establish ambitious energy transition targets.

Children are more vulnerable to climate and environmental shocks than adults. They are more susceptible to temperature changes due to their inability to regulate body temperature effectively, making them more prone to heat stroke. In drought conditions or areas of high-water scarcity, they face greater risks of dehydration, malnutrition, and water-borne diseases. During floods or storms, children are less able to physically protect themselves from immediate dangers, placing them at greater risk of injury or death. Furthermore, children are more vulnerable to the health and social impacts of service disruptions.

Recognizing the critical nature of this issue, the Ministry of Climate Change and Environment has worked closely with UNICEF and the Youth Climate Champion on the Climate Landscape Analysis for Children and Young People in the United Arab Emirates. This report highlights the necessity of understanding how vulnerable sectors of the population, like children, interact with the changing climate and provides insightful evidence on the impact of climate change and environmental degradation on children and young people in the UAE. The report also offers a child-centred analysis of existing policies, partners, and initiatives, a Hazard Risk map for children and young people, and a series of recommendations to help guide future policy and programming.

Through these collaborative efforts and ongoing research, the UAE is committed to implementing policies and programmes that safeguard the health, education, and overall well-being of its children in the face of climate change. The Supreme Council for Motherhood & Childhood (SCMC) is an independent governmental institution aimed at promoting the welfare and development of mothers and children, serving as the primary reference for decision-makers on motherhood and childhood matters in the UAE. The SCMC has launched several initiatives and programmes aimed at empowering and educating children about climate change, cultivating environmentally aware future generations. It also works with government bodies to create policies that boost environmental sustainability and resilience.

The Children's Advisory Council provides a platform for children to express their needs and vision for the future. It aims to prepare a generation of leaders capable of positive community involvement. The council consists of nine members, including two with special needs, representing all UAE children. Its goals include fostering participation, providing a structured environment for discussions, instilling loyalty and cultural

values, developing critical thinking, and encouraging dialogue on educational, health, cultural, and social issues.

On March 15, 2019, to mark Emirati Children's Day, the UAE established the Emirati Children's Parliament, embodying the "right to participation" and aligning with the UAE's commitment to children's rights as outlined in "Wadeema's Law." This platform allows children, including those with special needs, to express their views on issues affecting them and their communities. The parliament consists of 40 members, equally divided between boys and girls aged 10 to 16, representing all emirates, with a two-year membership term. In 2023, the Parliament formed the "Environment and Sustainable Development Committee" to engage children in environmental issues and sustainability efforts. This committee empowers young members to contribute to discussions and initiatives that promote a safer and more sustainable future.

During Emirati Children's Day in 2023, the theme "The Right to a Safe and Sustainable Environment" highlighted the importance of providing children with a healthy environment and involving them in sustainability efforts to ensure a better future for coming generations. The "Children's Environment Award," launched in collaboration with the Ministry of Climate Change and Environment, aims to promote environmental stewardship among children. It seeks to raise awareness and encourage active participation in preserving biodiversity and ensuring sustainability, starting in 2018.

During COP28, SCMC organized environmental workshops to enhance children's awareness and skills and was awarded the 2022 Children Environment Award, highlighting children's innovative projects and contributions to sustainability. Additionally, under the patronage of Her Highness Sheikha Fatima bint Mubarak, SCMC and UNICEF announced the appointment of "UNICEF Adolescent Ambassadors for Climate Change" at COP 28. The initiative was launched during a ceremony at the Women's Pavilion in Expo City Dubai on Emirati Children's Day, aiming to empower young ambassadors to advocate for climate action and sustainability, reflecting the UAE's commitment to engaging adolescents in shaping a sustainable future.

At COP28, SCMC signed a tri-party Memorandum of Understanding with the Abu Dhabi Early Childhood Authority and UNICEF to support the "Abu Dhabi Child-Friendly City" initiative. This initiative aims to prioritize children's well-being, development, and rights through comprehensive urban planning and focused social services.

The United Arab Emirates views gender equality as essential for effective and sustainable climate action, given both the capacity that women and girls bring to climate action and the disproportionate impacts of climate change on women and girls. The UAE has a strong record of empowering women in key climate and environment roles, with over 50% of UAE climate negotiators being women. Furthermore, the UAE is home to a robust ecosystem of women's organizations working on a wide range of issues, from equal pay regulation to renewable energy, finance, and women, peace, and security.

In 2024, the UAE ranked 7th globally and 1st among Arab countries in the UNDP's Gender Inequality Index. Additionally, the UAE ranked 1st globally in five of the World Economic Forum's Global Gender Gap Report 2022 sub-indicators: enrolment in primary education, enrolment in secondary education, enrolment in tertiary education, sex ratio at birth, and women in parliament. In recent years, the UAE has launched the UAE Gender Balance Strategy, a platform to enhance women's participation in the renewable energy transition, and a Strategic Partnership with UN Women, establishing a Women's Climate Fund to support

the mobilization of gender-responsive finance. This work is complemented by the General Women's Union, the national mechanism for women's empowerment.

The 2026 UAE Gender Balance Strategy represents the country's federal gender equality strategy and includes commitments to policy and legislative reform, programmes, partnerships with the private sector and international organizations, and international engagement on key areas – including sustainability and climate. The UAE government is also considering additional policy levers, such as gender impact analysis for climate policies, gender-responsive climate finance, and sex-disaggregation of climate-related data. The UAE has a strong track record in ensuring women are well-represented in delegations to the UNFCCC. For example, every year since 2016, the UAE has sent a delegation with 50% or more women to the Bonn Intersessional negotiations and Conference of the Parties. Women on the negotiation teams have access to peer-to-peer mentoring and development opportunities. Moreover, the UAE enjoys strong women's leadership, including through the UAE's Head of Delegation to the UNFCCC who supported the facilitation of the GST and the mid-term review of the GAP in 2022.

The UAE recognizes the crucial need to incorporate gender equality deeply into its efforts to tackle climate change. Significant efforts have been made to engage women in climate action and decision-making. Notably, Masdar, Abu Dhabi's renewable energy company is contributing to ensuring women are heard in the sustainability debate through the Women in Sustainability, Environment and Renewable Energy (WiSER) initiative. WiSER aims to educate, engage, and empower women globally to be enablers of sustainability and innovation. In addition, the UAE's NAP will integrate concrete actions across the NAP process and continue the country's ongoing efforts to create an enabling environment to ensure that no one is left behind, in line with the UAE Framework for Global Climate Resilience. Different social groups will be included in the UAE NAP development process, including women, men, children, youth, people of determination, elderly, migrant workers, indigenous communities, and low-income groups.

Domestically, women represent 56% of the graduates from STEM fields, while 44.5% of engineering undergraduates in the country are female - one of the highest globally. This has helped support the deployment of gender-responsive technological solutions to address climate change while fostering women's leadership in STEM. WiSER has sought to promote the deployment of gender-responsive technological solutions by fostering women's and girls' full participation and leadership in science, technology, research, and development in several ways. The year-long WiSER Pioneers Programme offers young women aged 25 to 35 access to bespoke educational workshops and global networking opportunities with industry experts. The programme empowers young women to take a leading role in the global transition to a net-zero future by providing them with a platform to make their voices heard. Since it's launched in 2018, the WiSER Pioneers Programme has invited more than 100 young women to take part in over 320 hours of training and workshops.

The WiSER Mentorship Programme, open to women enrolled in the WiSER Pioneers Programme, aims to help them progress in their careers by giving them access to one-to-one mentoring sessions with senior figures from various industries. The sessions focus on goal setting and help participants expand their skills and prepare for leadership roles. Launched in 2021, the WiSER Mentorship Programme invited more than 35 mentors based in the UAE and internationally to deliver more than 330 hours of one-to-one mentorship sessions.

The WiSER platform has conducted research on Gender, Inclusion, and Climate Change in the Middle East and Northern Africa. The research covered the following areas: climate-related health risks, climate-

related human security risks, access to finance, gender-responsive policies and strategies, capacity building, and awareness raising. WiSER collected and consolidated information through a survey available online in Arabic and English, circulated through diplomatic missions, government departments, and civil society. The research helped inform a white paper to understand impactful strategies to reduce women's vulnerability to climate change, existing capacity building initiatives, and how to support women-led initiatives, including seed funding, small business grants, and scaling up existing projects.

Moreover, the UAE initiated and endorsed the COP28 Gender-Responsive Just Transitions and Climate Action Partnership, where it committed to supporting the development of evidence-based methodologies, including sex, disability, and age disaggregated data and standard indicators, to assess gender equality in the transition to a Paris Agreement-aligned economy. The UAE has worked closely with UN Women UAE – Liaison Office for the GCC to strengthen the evidence base and understanding of the differentiated impacts of climate change on men and women. This has included the convening of high-level events on the critical intersection between climate change and women's empowerment, bringing together UN agencies, government officials, and civil society. In 2024, the UAE and UN Women adopted a strategic partnership. As part of this partnership, the UAE and UN Women will convene national, regional, and global policy discussions and strategy sessions that will strengthen the gender focus on climate change and contribute to global processes.

Furthermore, as part of the UAE-UN Women Strategic Partnership, both parties agreed to strengthen global frameworks, partnerships, norms, and standards to reinforce technical capacity to support gender-responsive climate action and climate resilience building. The General Women's Union has sought to promote capacity building on gender budgeting through working collaboratively across governments to convene discussions on: plastic consumption production, environmental sustainability with the Ministry of Environment and Climate Change, and women and environmental sustainability with Sharjah University. They have also conducted six workshops and field visits focused on women and agricultural financing with the Abu Dhabi Agriculture and Food Safety Authority, and gender-just transitions and financing on Emirati Women's Day with the COP28 Presidency.

Ahead of COP28 UAE, the United Arab Emirates supported the Women's Delegate Fund (WDF), which is run by the Women's Environment and Development Organisation (WEDO). This allowed women delegates, who might not otherwise be funded to travel to COP28 UAE, to both travel and attend capacity-building workshops ahead of the sessions. Additionally, the COP28 Presidency and Youth Climate Champion teams provided funding to facilitate the travel and participation of youth from the most climate-affected communities, with priority given to those who had not previously attended COP. Through the International Youth Climate Delegate Programme, 100 young people were fully funded and trained to attend COY18 and COP28, 56 of whom were women. This included 74 delegates from Small Island Developing States (SIDS) and Least Developed Countries (LDCs), 10 delegates from conflict regions, 12 indigenous youth, and 6 youth with disabilities. The Programme saw representation from Asia, Latin America and the Caribbean, Africa, the Middle East, Europe, and the Pacific. Many delegates were connected to their Party delegations through the Programme and participated in the COP negotiations.

The UAE hosted Gender Equality Day intentionally in conjunction with Finance Day during COP28 UAE to highlight the need for gender-responsive finance and budgeting. As part of this day, the COP28 Presidency co-hosted events with the European Bank for Reconstruction and Development (EBRD) and the International Finance Corporation (IFC). Further, the UAE has been working closely with the Global

Alliance for Green and Gender Action (GAGGA) and the Climate Champions Team (CCT) to support a campaign on facilitating access to finance for grassroots and women's organizations. The UAE continues to work with the Climate Champions Team on a campaign for direct access to finance for Indigenous Peoples, funding a Global Data Study for Indigenous Peoples to strengthen the evidence base of IP-led financed projects in climate action, and working with Indigenous Peoples Organizations.

In alignment with the national directives declared by the UAE President, designating 2024 as the Year of Sustainability in the UAE, and recognizing the nation's diverse composition of over 200 nationalities, the "Blue Residency" Programme was introduced. This ten-year residency is granted to individuals who have made extraordinary contributions to environmental protection, whether in marine life, land-based ecosystems, air quality, sustainability technologies, the circular economy, or related fields. This initiative underscores the nation's firm stance that the sustainability of the economy is inherently linked to the sustainability of the environment.

The Blue Residency for Sustainability Experts is the first long-term residency programme for individuals with exceptional contributions and efforts in environmental action and sustainability, both within and outside the United Arab Emirates. This residency aims to amplify and sustain the UAE's efforts in sustainability, aligning with the country's sustainability vision. The Blue Residency will be specifically granted to supporters of environmental action, including members of international organizations, global companies, associations, non-governmental organizations, global award winners, and distinguished activists and researchers in environmental work. This programme is open to both Emirati nationals and responsible residents who advocate for environmental protection, further solidifying the UAE's commitment to global environmental stewardship.

COP28 was a landmark for youth inclusion in high-level climate decision-making, with the COP28 UAE Presidency mainstreaming youth inclusion from the outset of planning and delivery. Previously, COP26 had seen a formal decision urging "Urges Parties and stakeholders to ensure meaningful youth participation and representation in multilateral, national and local decision-making processes", while COP27 had called for Parties to "consider including young representatives and negotiators into their national delegations", as well as featuring a COP Youth Envoy under the Presidency. The UAE directly responded to this with 70% of the UAE negotiators for COP28 being below the age of 35, while more than 60% were women. This level of youth inclusion is not only believed to be inherently valuable, but is also of great assistance in finding pathways to the net zero target through the innovative ideas, new perspectives and ambition for the future of youth can bring to the table. It is planned for this tradition to continue into COP29 and beyond, and will remain a priority for youth to be present in the heart of the international climate processes.

Despite these notable decisions, it was widely recognised that young people internationally continued to face barriers and challenges to their representation and participation in the COP and UNFCCC processes. To address this gap, the UAE created the role of Youth Climate Champion (YCC) and appointed Her Excellency Shamma Al Mazrui, as the COP28 YCC. The YCC was elevated to a high-level role within the COP Presidency leadership team, with a mandate to ensure meaningful participation and representation of children and youth in international climate decision-making, as well as to mobilize substantive youth input and outcomes from the COP and UNFCCC processes.

There was a total of 358 youth events during COP, with more than 22,000 participants. This included the mobilization of youth in the UAE, starting with their engagement in the Road to COP28 event on March 15, 2023, which saw the participation of more than 5000 people, most of them youth, in a nationwide effort of several agencies coming together to build momentum around the UAE hosting COP28 through various panels, capacity building workshops, youth circles, and other activations. Additionally, outcomes from the event and other events throughout the year ensured that input from Emirati youth informed the COP agenda.

As part of efforts to engage domestic youth in COP28, the Federal Youth Authority and the YCC also launched the UAE Youth Climate Delegates Programme; an initiative that selected 10 young people - 5 Emiratis and 5 residents - to undergo a robust capacity building programme on climate change and negotiations skills, and the opportunity to participate in various climate fora throughout the year, culminated in their participation in COP28 where the Emirati delegates joined the official COP28 UAE delegation to support them in negotiations, and residents joined observer groups in providing input into the negotiations and advocating for youth and children inclusion in the process. The YCC also partnered with YOUNGO - the Official Youth and Children Constituency to the UNFCCC - to launch an International Youth Climate Delegate Programme - which mirrored the Local Delegate Programme and fully funded and trained 100 young people from the most climate vulnerable communities and including people of determination, indigenous youth and those from conflict areas to attend COP28, thus ensuring representation from young people who rarely get a chance to participate in the UNFCCC process. Both Delegate Programmes were some of the most ambitious efforts to ensure inclusion of young people in the COP to date.

The substantive input of youth more broadly was garnered through a consultation series that continued over the full year in the build-up to COP across the UAE and internationally, including at the key high-level fora which are typically very restricted for youth, such as the Petersberg Climate Dialogue and the Pre-COP Ministerial which were both attended by young Emirati delegates. The official programming at COP then included the first-ever dedicated segment on youth and education during the World Climate Action Summit gathering of Heads of State, as well the Dubai Youth Climate Dialogue - an extensive series of opportunities for youth to discuss their hopes for the COP outcomes directly with Party negotiators. This included the launch of the first Youth Stocktake report, a joint initiative of YOUNGO and the COP28 Youth Climate Champion which sought to analyse the current state of youth inclusion in the UNFCCC process. This initiative is now being developed towards an ongoing process for monitoring and evaluation of the progress of youth inclusion in the process.

There were also many other domestic activities led by different agencies across the country for youth and children ahead of COP. The UAE launched the Climate Ambassadors Programme, inviting students to simulate climate negotiations at COP28. This programme, running from February to November 2023, involved 4,396 students, 470 teachers, and 147 sessions covering key concepts such as carbon and greenhouse gas mitigation, clean energy transition, loss and damage, food security and climate change, and environmental health and climate change.

During the COP, the Youth Climate Champion also supported for there to be a Children and Youth Pavilion and a Youth Climate Champion Pavilion as dedicated spaces for youth programming in the Blue Zone, as

well as for the first time a Youth Hub in the Green Zone which served as a home-away-from-home for young people to gather and organize events, exchange ideas, capture opportunities, and engage in climate change discussions. The hub was especially important as a convening space for children and youth without blue zone accreditation. The space was curated and operated by the Federal Youth Authority under the UAE Ministry of Culture and Youth, with support from the COP28 YCC. Aligned with COP28's thematic agenda, the hub delivered over 120 events and was visited by more than 70,000 people. The YCC pavilion offered further mentorship, capacity-building, and action opportunities, as well as a "Youth Ambition Majlis" series, bringing the Emirati format of a majlis to global youth. These dialogues brainstormed around topics such as how climate change is impacting mental health, the value of indigenous environmental knowledge, and how to scale up youth climate action across the Arab region.

Another priority for the Youth Climate Champion was to explore the COP as an opportunity for accelerating green job opportunities for young people. A majlis was held with the Green Jobs for Youth Pact, which brought together youth champions, policymakers, financiers, and educators to discuss the links between youth capacity-building and green job growth across the globe. In addition, a Green Skills Career Fair (in partnership with Pupilar, Generation Unlimited, and LinkedIn) was an all-day event connecting students with leading organizations and employers in the sustainability and environmental sectors with an exhibition space at COP28. More than 3,000 young people visited the Green Skills Fair and connected with climate-engaged companies to hear about in-demand green skills, showing young people's desire to increase their professional networks in the environmental sector and learn to navigate the new green economy.

One of the main outcomes of COP28 was the institutionalization of the COP28 Youth Climate Champion role through decision 16/CP.28, mandating that every future COP Presidency appoints a "Youth Climate Champion between the ages of 18 and 35[...] to act on behalf of the Presidency[...] to facilitate the enhancement of meaningful, inclusive engagement of youth in climate action, including within the UNFCCC process." The institutionalized YCC will now serve as the long-desired consistent support structure for youth and children across all COP years, thus leaving a strong legacy for the UAE as a champion for youth and children inclusion in climate change policymaking.

An important consideration for all of the work of the Youth Climate Champion was that children face distinct climate challenges from youth, even though these categories are often grouped together. Prior to the COP, a Children's COP simulation was held in partnership with UNICEF and Save the Children so as to gather perspectives from children on how climate change is affecting their communities and what support they may need. During the COP itself, a high-level roundtable was held to assess how climate change and other environmental challenges such as air quality pose a significant risk to children's health, as well as the urgent need to protect future generations from such risks. These dialogues helped secure agreement from Parties to include within the Global Stocktake a decision for an Expert Dialogue on the Disproportionate Impacts of Climate Change on Children to be held during the SB60 sessions in Bonn. At this dialogue, the UAE delegation brought a member of the Emirati Children's Parliament to contribute her views. The Dialogue ascertained several key findings and recommendations and it is hoped further international action will be agreed through the UNFCCC process.

A central consideration of the UAE in ensuring children are prepared for the future of climate change is through education. The Ministry of Education was proud to support the successful first Green Education Hub at COP28 and continues to work with the UNESCO Greening Education Partnership in exploring how education and curricula can best address climate issues. It was also the first COP to have a dedicated session on Youth and Education within the World Climate Action Summit gathering of Heads of State. The YCC also secured additional climate literacy resources for youth everywhere. By partnering with the UNFCCC Secretariat, the YCC helped create online learning modules on various UNFCCC thematic areas free of charge for youth to learn about key topics part of the COP process. Moreover, a partnership with Coursera, the e-learning platform, helped secure 5,000 free licenses for youth across the globe to access curated climate change courses.

One additional facet empowering women and youth includes the EN-WWF Connect with Nature initiative, a youth movement founded in partnership with EAD connecting young people with nature. The initiative fosters leadership skills and engages the youth as citizen scientists. In 2023, the youth community contributed 4,000 hours for nature across nearly 50 events.

7.5 Transparency, Implementation, and Governance

7.5.1 Climate Change Law

In August 2024, the UAE issued Federal Decree-Law No. (11) of 2024 on Limiting the Impacts of Climate Change, establishing a comprehensive and forward-looking framework to address climate change impacts. This decree outlines the UAE's commitment to reducing greenhouse gas emissions and enhancing national resilience to climate risks, in alignment with international climate obligations. It provides detailed definitions for key concepts such as climate neutrality, carbon offsetting, and emissions sources, and assigns responsibilities across federal and local government entities.

The decree authorizes the UAE Cabinet, based on proposals from the Ministry of Climate Change and Environment and in coordination with relevant authorities, to set annual emissions reduction targets for all sectors. These targets will align with the country's economic development priorities and global best practices, with regular reviews to ensure progress toward climate neutrality. The decree mandates the adoption of advanced technologies, including clean energy, carbon capture, and waste management, while encouraging innovation, private sector participation, and international collaboration.

Furthermore, it establishes mechanisms for the regular measurement, reporting, and verification of emissions, creates a national carbon registry, and supports adaptation planning across key sectors. To ensure compliance, the decree sets forth penalties for non-compliance and offers incentives to promote the development of emissions-reduction technologies. By enshrining these measures in law, the UAE reaffirms its leadership in global climate efforts and its long-term commitment to achieving Net Zero.

7.5.2 Voluntary pledges

The UAE's commitment to climate action is reflected in its extensive array of voluntary commitments, pledges, and initiatives for climate action, as well as the governance frameworks established to ensure effective tracking and implementation. The UAE's voluntary commitments, pledges, and initiatives demonstrate its leadership in global climate action. By setting ambitious targets, fostering inclusive

governance, and establishing robust tracking systems, the UAE is setting a strong example for other nations. These efforts are crucial for achieving the collective goals of the Paris Agreement and fostering a sustainable and resilient global future. This section will be instrumental in our NDC submission, showcasing the UAE's leadership and commitment to addressing the climate crisis through comprehensive and well-governed voluntary actions. As hosts of the COP28 that took place in Dubai in late 2023, the UAE successfully convened member states to agree on important climate action elements, raising political ambitions and emphasizing the need to increase climate finance, ultimately mobilizing around USD 85 billion. A number of these commitments included:

Global Cooling Pledge: Launched at COP28, this initiative aims to enhance international cooperation on sustainable cooling solutions, targeting energy efficiency and climate-friendly approaches. The pledge seeks to improve access to sustainable cooling for vulnerable populations, thereby reducing emissions and enhancing resilience against extreme heat. The pledge aims to reducing cooling-related emissions across all sectors by at least 68% globally relative to 2022 levels by 2050, consistent with limiting global average temperature rise to 1.5 °C and in line with reaching global net-zero emissions targets with significant progress and expansion to sustainable cooling by 2030. This aim will be advanced through individual countries' domestic actions as consistent with their domestic plans and priorities, and international collaboration. Ministry of Energy and Infrastructure is working on the national efficient cooling program under the national demand side management programme to enhance energy efficiency in built environment sector.

Global Renewables and Energy Efficiency Pledge: At COP28, the UAE led a global commitment to triple renewable energy capacity by 2030, aligning with the Paris Agreement's goal of limiting global warming to 1.5°C.

Methane Reduction: Tackling methane emissions has always been a priority for UAE. In 1978, His Highness Sheikh Zayed, the founder and late president of the UAE, passed Law No. 8 to regulate oil and gas operations banning routine flaring and preventing air and water pollution. The Law requires the industry to use the most reliable technological methods, equipment, and materials that adhere to international standards, both in safety and efficiency.

In 2022 and 2023, ADNOC methane emissions abatement efforts and plans were recognized with the award of the OGMP 2.0 Gold Standard Pathway status. With a target of to have methane intensity below 0.15% by 2025, this was further demonstrated as the UAE co-hosted with US and China at COP28 the first Methane and Non-CO₂ GHGs Summit to raise the profile of these highly potent gases. Accordingly, the UAE consensus adopted at COP28 by all parties calls for "Accelerating and substantially reducing non-carbon-dioxide emissions globally, including in particular methane emissions by 2030."

Oil and Gas Decarbonization Charter: The UAE with other partners launched at COP28 the Oil & Gas Decarbonization Charter (OGDC), which ADNOC is a founding signatory, to accelerate abatement of

methane emissions from the global oil and gas sector through mobilizing oil and gas companies to commit to:

- Achieving near zero upstream methane emissions by 2030
- Achieving zero routine flaring by 2030
- Aiming for net zero by 2050 for operational emissions
- Setting a company specific 2030 aspirations for Scope 1 & 2 emissions public by 2025
- Participating in cross-industry collaboration towards implementation of industry best practices
- Adopting an internationally recognized framework to measure, monitor, report and verify progress in emissions reduction (e.g. OGMP 2.0)
- Investing in the energy system of the future.

Today more than 50 Oil & Gas companies committed to the OGDC representing almost 43% of global oil production. UAE companies under the OGDC include ADNOC, SNOC, Dragon Oil, Crescent Petroleum, Dolphin Energy.

Nature Package: This initiative includes a USD 100mn of new aid finance for nature-climate projects with commitments to enhance biodiversity and ecosystem services, with significant investments in forests and mangrove restoration and conservation, aiming to increase carbon sequestration and protect coastal areas.

Gender-responsive Just transitions and Climate Action Partnership: The UAE has committed to integrating gender considerations into its climate action plans, focusing on equitable access to cooling technologies and sustainable energy solutions for women and vulnerable groups.

Additional Initiatives and Declarations

- **MAC:** The UAE is a founding member of this international initiative aimed at conserving and restoring mangrove ecosystems to enhance carbon sequestration and protect biodiversity.
- **AIM4C:** This partnership focuses on increasing investment and innovation in climate-smart agriculture and food systems, supporting the sustainable transformation of agriculture to meet future food demands.
- **Global Green Growth Institute (GGGI):** The UAE collaborates with GGGI to promote sustainable development in emerging economies, emphasizing green growth strategies that align with national development goals.
- **Nature and Resilience Package (NRP):** The UAE has committed to enhancing the resilience of natural ecosystems through targeted conservation efforts and sustainable management practices, contributing to global biodiversity goals.
- **Industrial Transition Accelerator (ITA):** This initiative seeks to increase the number of commercial-scale deep decarbonization projects reaching Final Investment Decision (FID) by 2030, contributing to emissions reductions in line with the Paris Agreement's goal of limiting

global warming to 1.5 degrees. The initiative will focus on two main pillars: partnering with governments to provide tailored support for critical projects and enhancing the economic environment to stimulate global investment in these initiatives.

- **Cement and Concrete Breakthrough Initiative:** Launched at COP28 in collaboration between the UAE and Canada, the initiative aims to accelerate progress towards making near-zero emission cement the preferred choice in global markets, with efficient use and near-zero emission cement production established and
- growing in every region of the world by 2030 by strengthening international collaboration in the area,
- **ODGC:** The UAE provides technical and financial support to developing countries to strengthen governance frameworks for climate action and sustainable development.
- **Transnational Climate Cooperation (TCC):** The UAE actively engages in international collaborations to address transboundary climate challenges, fostering regional partnerships for climate resilience and adaptation.
- **RRP (Resilience and Readiness Programme):** This programme supports vulnerable countries in building resilience to climate impacts, focusing on preparedness and adaptive capacity-building.
- **Food Security and Climate Declaration:** Endorsed by numerous countries, this declaration emphasizes the integration of food security and climate resilience into national development plans, promoting sustainable agriculture and food systems.
- **Health and Climate Declaration:** This declaration, adopted in COP 28 and was endorsed by multiple countries, seeks to accelerate the development of climate-resilient, sustainable, and equitable health systems, integrating health considerations into climate policies and actions.
- **Climate change and health Resolution:** This was sponsored by UAE and was adopted in the World Health Assembly (WHA) 77, 2024 setting new ambitious priorities for countries and WHO

Domestically, MOCCAEC has introduced the UAE Climate-Responsible Companies Pledge, an initiative aimed at significantly increasing private sector involvement in the UAE's decarbonization efforts, aligning with the UAE Net Zero by 2050 Strategic Initiative. The pledge serves as a foundation for future collaborations between the private sector, NGOs, and international organizations, with Emirates Nature, in association with the World Wildlife Fund (WWF), acting as a strategic partner. This initiative is designed to support companies in developing and implementing net-zero plans, contributing to the nation's broader goal of achieving climate neutrality.

The pledge encourages companies to commit to transparent measurement and reporting of their greenhouse gas emissions, develop science-based strategies to reduce their carbon footprints, and integrate climate change mitigation and adaptation into their core business practices. Additionally, it promotes an inclusive approach, ensuring that youth, women, and vulnerable segments of society are actively involved in the creation of these plans. Ultimately, the pledge aims to unify the efforts of the private sector with national goals, driving collective action towards achieving the UAE's net-zero target by 2050.

7.5.3 National Dialogue on Climate Ambition

The NDCA, initiated by the Ministry of Climate Change and Environment, serves as a pivotal platform for fostering constructive discussions and the exchange of ideas among stakeholders from both the public and private sectors. This initiative aims to enhance environmental sustainability and mitigate the impacts of climate change by raising ambitions across all sectors and increasing their participation in achieving the UAE's Net Zero by 2050 strategy. The NDCA is structured to address sector-specific climate action and adaptation plans through comprehensive engagement and collaboration.

Since its inception in 2022, the NDCA has convened numerous sessions, each focusing on different sectors and thematic areas. These sessions bring together key decision-makers from federal and local government entities, private sector representatives, and NGOs to discuss sector-specific expectations and climate actions. Topics discussed include innovative technologies, sectoral requirements, and the identification of key players. For instance, discussions have proposed initiatives to reduce carbon emissions in the cement industry by reducing reliance on limestone and promoting the use of renewable energy in factories. Similarly, the dialogue has reviewed global energy prospects and local sector landscapes, highlighting emerging solutions such as clean hydrogen and carbon capture, storage, and reuse technologies.

The impact of the NDCA extends to various critical areas such as sustainable financing, where sessions have explored global trends and local implementation strategies to support the UAE's Net Zero goal. The dialogue has also focused on the role of the insurance sector in enhancing climate change adaptation capabilities and leveraging green finance to boost national climate action ambitions. Nature-based solutions, such as the use of blue carbon ecosystems like mangrove forests and wetlands, have been discussed to accelerate carbon sequestration efforts. Moreover, the NDCA has identified opportunities in the construction and building sector to mitigate climate impact by promoting green purchasing practices, improving energy efficiency, and reducing waste generation.

Stakeholder engagement through the NDCA is comprehensive. This inclusive approach ensures that the strategies reflect local needs and priorities, enhancing the overall effectiveness of the UAE's climate action plan. The dialogue has addressed various sectors, including transportation and retail, discussing ways to enhance their sustainability and contribute to emissions reduction. For instance, sessions have explored transitioning to responsible consumer behaviour in the retail sector and the establishment of the National Carbon Registry to track carbon balances from projects and companies. Through these collaborative efforts, the NDCA continues to play a crucial role in driving the UAE's ambitious climate.

The following NDCA sessions have been conducted:

- **The 1st NDCA** – May 2022 “Cementing a Decarbonized Future”
- **The 2nd NDCA** - June 2022 “The Energy Sector: A catalyst towards carbon neutrality”
- **The 3rd NDCA** – July 2022 “Financing the transition of UAE to net zero by 2050”
- **The 4th NDCA** - August 2022 “Roadmap to Achieve Net Zero in the Hospitality Sector”
- **The 5th NDCA** - October 2022 “Building an effective Insurance sector as part of climate adaptation and resilience management”
- **The 6th NDCA** – October 2022 “Accelerating carbon dioxide removal and sequestration using eco-based solutions”

- **The 7th NDCA** – November 2022 “Innovation in Waste Management as an accelerator to achieve Net Zero targets”
- **The 8th NDCA** - January 2023 “Adaptation in the Context of Community behaviour”
- **The 9th NDCA** - Feb 2023 “Decarbonizing the Buildings Sector”
- **The 10th NDCA** – May 2023 “Toward a low carbon green industry”
- **The 11th NDCA** – July 2023– “Accelerating the Shift: Decarbonizing Ground Mobility”
- **The 12th NDCA** – September 2023– “Innovative Financing Through National Carbon Registry “
- **The 13th NDCA** – October 2023– “The Retail Industry: Shifting to A Responsible Consumer Behaviour”

7.5.4 MRV and BTR

To support the implementation of the enhanced transparency framework (ETF) of the Paris Agreement, the United Arab Emirates embarked on the development of the MRV Transparency System, which aims to enhance transparency in mitigation frameworks within the UAE. This system plays a vital role in prioritizing national policymaking and engaging policymakers and the public with arguments in support of change. It establishes a robust framework to track sectoral emissions and progress towards achieving NDCs, aligns with the Net Zero by 2050 strategic initiative, and assesses the impacts of policies, particularly the UAE Climate Change Plan 2017-2050. Furthermore, it supports the projection of emission inventories in the UAE and prepares comprehensive mitigation actions and implementation plans.

The National MRV Transparency System will provide a digital Integrated Emissions Quantification Tool (IEQT) to support the collection and calculation of GHG and air quality (AQ) pollutants in the UAE. Inventories follow the 2006 IPCC guidelines and, where appropriate, the 2019 Refinement to the 2006 Guidelines for GHGs. To support the UAE Air Pollution Agenda, the AQ emissions inventory is consistent with the 2019 EMEP/EEA Guidebook for AQ.

Since the last NDC published in July 2023, the development of the National MRV Transparency System and its tool has advanced to the Beta-Public phase. Local and national entities and organizations can now test the system's functionality, including real data collection, calculation processes, and verification using multiple approval gates.

Implementation Governance:

Covering both GHG and AQ emissions requires strong institutional and legal arrangements to support data collection and verification, ensuring accurate reporting. The UAE has established a formal institutional framework detailing the roles and responsibilities of various entities at both the national and emirate levels. This framework builds upon the existing governance structures and capabilities of each emirate.

The institutional framework of the UAE MRV Transparency System aims to:

- Improve governance by enhancing legislation to increase efficiency and accountability in developing the national inventory;
- Define and facilitate data flows through the identification of key datasets, data providers, and data collection processes;

- Increase technical expertise within national institutions and enhance the capabilities of national experts in respective inventory sectors;
- Improve stakeholder engagement across key stakeholders in the country.

The MRV institutional framework identifies a coordinating agency for each emirate to gather and collate emirate-specific activity and data to be supplied to the IEQT tool. Additionally, the framework entails the appointment of a Single National Entity (SNE) responsible for overseeing the inventory reports and coordinating responsibilities at the national level. The primary functions of the SNE are:

- Overall control of the National MRV Transparency System development and function;
- Final approval of the GHG and AQ inventory outputs;
- Provision of the necessary institutional, legal, and contractual arrangements to ensure timely delivery of emissions estimates;
- Selection of coordinators as part of the MRV Technical Team and sectoral experts in the Technical Sector Expert Working Group;
- Establishment of data supply agreements with technical support from the MRV Technical Team.

The MRV Technical Team members, including the inventory coordination teams, key subject matter experts from the UAE GHG and AQ inventory compilation team, and relevant government departments, serve as an additional support and verification layer. They coordinate the data collection process, compile the inventories to ensure consistency, and review data for quality assurance and quality control.

EAD in partnership with MOCCA is working to develop and implement facility-level MRV system. Such scheme is designed to support policies and regulations such as Carbon Pricing schemes which require detailed source-level data, it also contributes to enhancing the overall GHG data quality and inform/complement the National GHG inventories and National MRV systems.

Application of International Standards and Accreditation for Verifiers:

1- ISO/IEC 17029:2019 (Validation and Verification Bodies): This standard sets the requirements for bodies performing validation and verification as a conformity assessment. It focuses on impartiality, competence, consistent operation, and confidentiality, which are crucial for the credibility of MRV (Measurement, Reporting, and Verification) activities.

2- ISO 14065:2020 (Greenhouse Gases - Requirements for Verification and Validation Bodies): Specifically tailored for GHG assertions, this standard provides the principles and requirements for bodies validating and verifying GHG emissions. It ensures that verifiers have the competence, consistent processes, and impartiality needed for accurate emissions data.

The National Accreditation Bodies (ENAS, EIAC) can provide accreditation against these standards, which provides assurance that the MRV bodies are operating at a high level of professionalism and competence, ensuring the reliability of emissions data reported under the UAE's NDC

Biennial Transparency Report

The United Arab Emirates is actively developing its Biennial Transparency Report (BTR) to align with its commitment to the Enhanced Transparency Framework and best practices while adhering to the outline

adopted in CMA 3. This report provides a comprehensive view of the UAE's climate initiatives within its broader efforts to combat climate change, ensuring the highest standards of transparency and accountability.

To ensure a comprehensive and accurate database, the UAE engages all stakeholders in the data collection process across the Net Zero sectors and the sectors as per the 2006 IPCC guidelines, maintaining a feedback tracker on all review comments received. This approach guarantees the capture of all relevant data and active stakeholder involvement, enhancing the quality of national reports.

By leveraging these tools and frameworks, the UAE aims to meet its reporting obligations under the ETF, contributing to global climate transparency and accountability. The UAE is set to publish its first BTR by 2024.

7.6 Alignment to international frameworks and plans

The UAE's Third NDC is intricately aligned with several international frameworks and plans, ensuring a cohesive and comprehensive approach to climate action. Building on the success of COP28, the UAE recognizes the climate crisis as a global crisis, and therefore aims to harmonize its national climate policies with global commitments, reflecting its proactive stance in the international climate arena.

The Third NDC forms a vital component of the UAE's broader climate strategy, closely linked with the Long-Term Strategy and the NAP. The LTS, published in early 2024, complements the net zero strategy by outlining the UAE's ambitions beyond 2035. It addresses specific areas not covered by the NDC, such as international aviation and maritime emissions. Importantly, the LTS is designed to be updated regularly in response to new data and evolving international requirements, ensuring that the UAE's climate policies remain adaptive and forward-looking.

Scheduled for release in 2025, the NAP builds upon the Adaptation Development Roadmap presented during COP28. This plan will elaborate on the UAE's adaptation ambitions, updating the UAE Climate Risk Assessment and evaluating the loss and damage caused by climate change. The NAP integrates insights from international frameworks such as the Sendai Framework for Disaster Risk Reduction 2015-2030 and the UNFCCC Warsaw International Mechanism for Loss and Damage. These frameworks emphasize risk management, insurance, and financial instruments, which are mirrored in the UAE's updated Climate Adaptation Action Plan by prioritizing the insurance sector as a critical industry.

Additionally, the Biennial Transparency Report will be published later in 2024, aligned with the Enhanced Transparency Framework. This report will provide a detailed account of emissions up to 2022, reflecting the progress of the previous NDC and ensuring transparency and accountability in the UAE's climate action efforts.

In parallel the UAE has published 5 National Communications (NC) reports, and a Biennial Updated Report (BUR). As the UAE continues to build capacity, the BTR will supersede the BUR, and NC reports will continue to be reported in accordance to (decision 1/CP.16, para. 60(b)).

The alignment of the BUR, NC, NDC, LTS, NAP, and BTR ensures a comprehensive and integrated UAE climate agenda. By continuously updating and refining its strategies, the UAE demonstrates an active stance in addressing climate change, reinforcing its commitment to both national and global climate goals.

8. ICTU Table

1. Quantifiable information on the reference point (including, as appropriate, a base year):		
a	Reference year(s), base year(s), reference period(s) or other starting point(s);	2019
b	Quantifiable information on the reference indicators, their values in the reference year(s), base year(s), reference period(s) or other starting point(s), and, as applicable, in the target year;	UAE's net GHG emissions in 2019 are 196.3 MtCO ₂ e. (including LULUCF)
c	For strategies, plans and actions referred to in Article 4, paragraph 6, of the Paris Agreement, or policies and measures as components of nationally determined contributions where paragraph 1(b) above is not applicable, Parties to provide other relevant information;	Not Applicable
d	Target relative to the reference indicator, expressed numerically, for example in percentage or amount of reduction;	Fixed level target: 103.5 MtCO ₂ e in 2035 (including LULUCF)

		Base year target: 47% reduction below 2019 net GHG emission level in 2035
e	Information on sources of data used in quantifying the reference point(s);	The total emissions in the base year is based on the National GHG Inventory of the UAE, which is published and submitted alongside the UAE's First BTR in 2024.
f	Information on the circumstances under which the Party may update the values of the reference indicators	<p>The UAE remains dedicated to enhancing the quality and accuracy of its greenhouse gas inventory by conducting recalculations in line with IPCC good practice guidance.</p> <p>In its efforts to achieve an economy-wide GHG target, the base year of 2019, which was used in the previous Nationally Determined Contribution, has been reassessed and updated for this 3rd NDC and the Biennial Transparency Report.</p> <p>The UAE is also developing a comprehensive MRV-Transparency System and Framework that encompasses all GHG and air pollutant emissions. This will ensure the establishment of up-to-date, traceable, and quantifiable emissions data, aligned with the national mitigation targets.</p>
2. Time frames and/or periods for implementation:		
a	Time frame and/or period for implementation, including start and end date;	2019 - end of 2035
b	Whether it is a single-year or multi-year target, as applicable.	single-year target
3. Scope and coverage:		
a	General description of the target;	An enhanced and more ambitious Economy-wide target of reducing 47% net GHG emissions level by 2035 compared to 2019 level – with alignment to reach net zero by 2050. Sectoral level targets as described in Chapter 4.

b	<p>Sectors, gases, categories and pools covered by the nationally determined contribution, including, as applicable, consistent with Intergovernmental Panel on Climate Change (IPCC) guidelines;</p>	<p>The NDC covers all national GHG emissions (CO₂, CH₄, N₂O). As the UAE is ratifying the Kigali Amendment to the Montreal Protocol, Fluoridated gases (HFCs, PFCs, SF₆, NF₃) are also covered for the first time in the national NDC to ensure a more comprehensive and robust reporting.</p> <p>Under the UAE Net Zero sectoral distribution, direct emissions from burning of fossil fuels to generate power and water are not indicated directly, but are instead distributed into the sectors that make use of the resources, while emissions from oil and gas are accounted for in the industrial sector. The sector split is done in accordance to the domestic institutional arrangements and optimized for implementation, enabling the country to track progress across all domestic sectors.</p> <p>The sectoral break-down as per IPCC thus differs from the above-mentioned sector split. As per the IPCC, four sectors have been outlined with a slightly different emissions distribution. The Energy sector is comprised of all emissions from the generation of electricity in addition to oil and gas operations. IPPU represents the emissions from non-energy related industrial activities. AFOLU represents all emissions from the agricultural sector in addition to all sequestration from existing and enhanced regional vegetation. The waste is in line with the Net Zero waste sector, comprising of all solid and waste water emissions in the region. Base year and target year emissions based on the IPCC sector split are provided below.</p> <table border="1" data-bbox="877 899 1686 1170"> <thead> <tr> <th>Sector</th><th>2019 Emissions (MTCO₂e)</th><th>2035 Emissions (MTCO₂e)</th></tr> </thead> <tbody> <tr> <td>Energy</td><td>171.4</td><td>87.6</td></tr> <tr> <td>IPPU</td><td>24.4</td><td>18.5</td></tr> <tr> <td>AFOLU</td><td>-4.3</td><td>-5.6</td></tr> <tr> <td>Waste</td><td>4.8</td><td>3.0</td></tr> <tr> <td>Total</td><td>196.3</td><td>103.5</td></tr> </tbody> </table> <p>These account to the same baseline and reduction value as indicated for both types of distributions.</p>	Sector	2019 Emissions (MTCO ₂ e)	2035 Emissions (MTCO ₂ e)	Energy	171.4	87.6	IPPU	24.4	18.5	AFOLU	-4.3	-5.6	Waste	4.8	3.0	Total	196.3	103.5
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c	<p>How the Party has taken into consideration paragraph 31(c) and (d) of decision 1/CP.21;</p>	<p>All categories of anthropogenic emissions or removals, including, fluorinated gases (HFCs, PFCs, SF₆) are within the inventory's scope.</p>																		

		While emissions from domestic aviation and shipping are covered as memo items, emission and reductions from international aviation and shipping are not in the scope of this NDC.
d	Mitigation co-benefits resulting from Parties' adaptation efforts and/or economic diversification plans, including description of specific projects, measures and or initiatives of Parties adaptation actions and/or economic diversification plans	Refer to Chapter 6 'Adaptation' for mitigation co-benefits resulting from adaptation efforts
4. Planning processes:		
Information on the planning processes that the Party undertook to prepare its nationally determined contribution and, if available, on the Party's implementation plans including, as appropriate:		
a(i)	Domestic institutional arrangements, public participation and engagement with local communities and indigenous peoples, in a gender-responsive manner;	Refer to Chapter 3 'Stakeholder Engagement in NDC Planning and Preparation Process' and Chapter 7 Implementation and Enablers
a(ii)	Contextual matters, including, inter alia, as appropriate:	Refer to 4 a(ii)a, 4a(ii)b and 4a(ii)c
a(ii)a	a. National circumstances, such as geography, climate, economy, sustainable development and poverty eradication;	Refer to Chapter 2 'UAE National Circumstances'

a(ii)b	Best practices and experience related to the preparation of the nationally determined contribution;	<p>UAE's NDC preparation demonstrates the following best practices:</p> <ol style="list-style-type: none"> 1. Inclusive Development Approach: To develop the UAE Net Zero Strategy (including the 2035 targets outlined in the NDC), the UAE involved government entities in a whole-of-society approach led by the Ministry of Climate Change and Environment. This approach engaged all levels of government (including federal, emirate, and city municipality levels), as well as private sector and non-state actors, to collaboratively develop the roadmap outlined in this NDC to reach 2035 targets. The comprehensive government approach and robust, transparent implementation plan enable the UAE to deliver on its NDC. 2. Governance and Alignment: In 2016, the UAE established the UAE Council on Climate Change and Environment, an inter-ministerial, inter-emirate governance body that ensures alignment across federal and emirate-level policies and interventions. 3. Public-Private Collaboration: Recognizing the necessity of public and private sector collaboration to tackle climate change, key private sector entities were involved in the NDC development process. Refer to Chapter 3.2 'Inclusion of Non-Government Stakeholder Groups.' 4. Integrated Planning: The NDC planning process is closely linked with the UAE Net Zero Strategy planning and Long-Term Strategy, with an inventory built in alignment with the BTR development exercise. The stakeholder engagement process for the NDC was closely linked to the existing LTS to ensure the UAE's planning process is cohesive and targeted. This exercise further operated to ensure alignment between long-term vision planning, short-term targets and implementation. 5. Consideration of Co-Benefits: The NDC development considers multiple co-benefits such as job creation (outlined in Chapter 7 'Implementation and Enablers'), environmental benefits (described in Chapter 6 'Adaptation'), and social justice (e.g., ensuring livable conditions for the younger generation particularly impacted by climate change), while driving towards enhanced mitigative efforts. 6. Adherence to the Enhanced Transparency Framework: The UAE's NDC follows the rules for transparency and understanding set out in Decision 4/CMA.1. Going forward, the UAE will continue to follow UNFCCC guidelines and carry out the National MRV- Transparency tool (Monitoring, Reporting, and Verification) to digitalize and atomize data collection processes across the different sectors, and track progress through years. Refer to Chapter 7.6 'MRV Plan and Implementation Governance.'
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a(ii)c	Other contextual aspirations and priorities acknowledged when joining the Paris Agreement;	The UAE reaffirmed its commitment to several key aspirations and priorities, recognizing the essential role in addressing climate change and ensuring sustainable development. Further information can be found across this NDC document and Chapter 7.5.2 on voluntary pledges. .
b	Specific information applicable to Parties, including regional economic integration organizations and their member States, that have reached an agreement to act jointly under Article 4, paragraph 2, of the Paris Agreement, including the Parties that agreed to act jointly and the terms of the agreement, in accordance with Article 4, paragraphs 16- 18, of the Paris Agreement;	Not applicable
c	How the Party's preparation of its nationally determined contribution has been informed by the outcomes of the global stocktake, in accordance with Article 4, paragraph 9, of the Paris Agreement;	The development of this NDC 3.0 has been informed through the outcomes of the GST at COP28 – ultimately keeping 1.5 C within reach. This includes enhanced ambitions across the UAE's energy transition, emissions reductions, adaptation and resilience. Further information and details can be found across Chapters 4, 6, and 7.
d	Each Party with a nationally determined contribution under Article 4 of the Paris Agreement that consists of adaptation action and/or economic diversification plans resulting in mitigation co-benefits consistent with Article 4, paragraph 7, of the Paris Agreement to submit information on:	

d(i)	How the economic and social consequences of response measures have been considered in developing the nationally determined contribution;	<p>The UAE has comprehensively considered the economic and social consequences of its response measures to ensure a just transition to a low-carbon economy. This approach aims to minimize negative impacts while maximizing opportunities for sustainable growth, job creation, and social inclusivity.</p> <p>Economic Impact Considerations: The UAE has modeled the impact on jobs for each decarbonization measure across all sectors, assessing both the potential for job losses in traditional industries and the creation of new jobs in emerging green sectors. This analysis helps identify areas where targeted capability-building efforts are required, as detailed in Chapter 7.3 'Capability Building Requirements.' Additionally, the environmental impacts of each decarbonization measure have been carefully evaluated to ensure that sectoral targets and pathways align with broader sustainability goals, as outlined in Chapter 4.3 'Sectoral Targets and Pathways.'</p> <p>Social Impact Considerations: Inclusivity and empowerment are core elements of the UAE's climate agenda. The NDC emphasizes protecting and enabling the most vulnerable groups in society, such as women, youth, children, and people of determination. These groups were not only consulted but actively involved in shaping the UAE's climate strategies and policies, reflecting the country's commitment to integrating diverse perspectives into its climate actions. By prioritizing the inclusion of these stakeholders, the UAE ensures that its climate actions promote social equity and enhance the resilience of its population to climate impacts. Further information can be found in Chapter 7.4 Women and Youth.</p> <p>Involvement of the Private Sector: The UAE recognizes the essential role of the private sector in achieving sustainable economic growth and climate goals. By engaging private enterprises in climate action planning and maintaining continuous consultations with diverse stakeholders, the UAE ensures its policies are economically sound and aligned with market realities. This inclusive approach fosters collaboration, leveraging business innovation and investment to drive a low-carbon transition while safeguarding economic stability.</p> <p>Further Insights: By considering both economic and social dimensions, and by fostering active engagement with the private sector, the UAE's NDC takes a balanced approach to climate action. This approach recognizes that decarbonization can drive economic growth, foster innovation, create new employment opportunities, and also secures stakeholder buy-in while safeguarding social welfare.</p> <p>The UAE's commitment to ongoing inclusivity and stakeholder consultation ensures that policies are pragmatic and actionable and that all segments of society are engaged in and benefit from the transition, thereby supporting a resilient, diversified economy aligned with long-term sustainability goals.</p>
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d(ii)	Specific projects, measures and activities to be implemented to contribute to mitigation co-benefits, including information on adaptation plans that also yield mitigation co-benefits, which may cover, but are not limited to, key sectors, such as energy, resources, water resources, coastal resources, human settlements and urban planning, agriculture and forestry; and economic diversification actions, which may cover, but are not limited to, sectors such as manufacturing and industry, energy and mining, transport and communication, construction, tourism, real estate, agriculture, and fisheries.	Refer to Chapter 6 'Adaptation' for further details.
5. Assumptions and methodological approaches, including those for estimating and accounting for anthropogenic greenhouse gas emissions and, as appropriate, removals		
a	Assumptions and methodological approaches used for accounting for anthropogenic greenhouse gas emissions and removals corresponding to the Party's nationally determined contribution, consistent with decision 1/CP.21, paragraph 31, and accounting guidance adopted by the CMA;	<p>The UAE applies a net accounting approach in accounting for the NDC, based on the UAE's inventory which follows the IPCC 2006 Guidelines. Net emissions in the target year will be compared against net emissions in the base year to calculate the percentage emissions reductions achieved.</p> <p>The UAE is set to submit its Biennial Transparency Report every two years thereafter, in accordance with the modalities, procedures, and guidelines outlined in Decisions 4/CMA.1 and 18/CMA.1 of the Paris Rulebook, as well as progress on achieving its NDC.</p>
b	Assumptions and methodological approaches used for accounting for the implementation of policies and measures or strategies in the nationally determined contribution;	The UAE will account for the impact of its policies and measures through the inventory. If necessary, additional impact of specific policies and measures would be quantified, defining appropriate methodologies and assumptions to be noted in the BTR.
c	If applicable, information on how the Party will take into account existing methods and guidance under the Convention to account for anthropogenic emissions and removals, in accordance with Article 4, paragraph 14, of the Paris Agreement, as appropriate;	Refer to (5.a)
d	IPCC methodologies and metrics used for estimating anthropogenic greenhouse gas emissions and removals;	Refer to (5.a) above. The UAE has developed the emissions in alignment with the AR5 100-year global warming potentials.
e	Sector-, category- or activity specific assumptions, methodologies, and approaches consistent with IPCC guidance, as appropriate, including, as applicable:	Refer to (5.a) above.
e(i)	Approach to addressing emissions and subsequent removals from natural disturbances on managed lands;	In the event that the UAE faces a natural disturbance, the UAE will consider the Natural Disturbance Provision to account for subsequent emissions or removals on managed lands

e(ii)	Approach used to account for emissions and removals from harvested wood products;	Not Applicable
e(iii)	Approach used to address the effects of age-class structure in forests;	Not Applicable
f	Other assumptions and methodological approaches used for understanding the nationally determined contribution and, if applicable, estimating corresponding emissions and removals, including:	
f(i)	How the reference indicators, baseline(s) and/or reference level(s), including, where applicable, sector-, category- or activity-specific reference levels, are constructed, including, for example, key parameters, assumptions, definitions, methodologies, data sources and models used;	<p>In the process of building capacity for the development of National Inventories, the 2019 baseline was validated and updated concurrently with the development of the National Inventory published in the 2024 BTR. - of which the assumptions and parameters are disclosed.</p> <p>The UAE had previously published its Net Zero strategy outlined in its LTS submission. In response to the GST and the UAE Consensus, the 3rd NDC is developed to further enhance ambition for the 2035 time-horizon. The UAE took on a whole-of-economy approach, engaging stakeholders across the power and water, industry, transport, buildings, waste, agricultural, environmental, and social sectors to further ascertain mitigation potential in the context of the UAE's national circumstances.</p> <p>Details of this NDC's reference indicators will be explained in the UAE's subsequent BTR submission in 2026.</p>
3	For Parties with nationally determined contributions that contain non-greenhouse-gas components, information on assumptions and methodological approaches used in relation to those components, as applicable;	Not applicable
f(iii)	For climate forcers included in nationally determined contributions not covered by IPCC guidelines, information on how the climate forcers are estimated;	Not Applicable
f(iv)	Further technical information, as necessary;	Not Applicable
g	The intention to use voluntary cooperation under Article 6 of the Paris Agreement, if applicable.	While the UAE primarily intends to rely on domestic efforts to achieve its NDC objectives, it may consider or reserve the right to use voluntary cooperation under Article 6 of the Paris Agreement to partially fulfil these commitments. Should the UAE decide to use such voluntary cooperation, it will report through its biennial transparency reports, consistently with any guidance adopted under Article 6.
6. How the Party considers that its nationally determined contribution is fair and ambitious in the light of its national circumstances:		
a	How the Party considers that its nationally determined contribution is fair and ambitious in the light of its national circumstances;	The UAE, accounting for around 0.3% of global cumulative CO ₂ emissions as of 2022, is a young nation that is still undergoing significant societal and economic transformation. With this development momentum, the UAE has been actively contributing to solving the climate crises through enhanced mitigation and adaptation policies and measures domestically and internationally. The UAE's emissions reduction target set out in this NDC, is based on the principles of CBDR-RC and equity, which are central to the UNFCCC and the Paris Agreement. As a Non-Annex 1 country with relatively lower historical contributions to global emissions and a small population, the UAE's target reflects its economic capacity and significant ambition.

		<p>The UAE's emissions reduction from its 2019 baseline balances ambition with fairness, ensuring that its contributions are significant but achievable given its national circumstances. Equity in climate targets ensures that countries with higher capacities and lower historical emissions, like the UAE, have targets that reflect their ability to act without compromising their development needs. The UAE's assessment of fair share looks to emphasize all these key features of enhanced climate action through a balanced approach by: maximizing ambition in national efforts; protecting people, nature, lives and livelihoods and ensuring broader sustainable development objectives; contributing to the advancement of global efforts in other developing countries to enhance their climate action.</p> <p>Delivering on these targets will push the limits of technical feasibility in some sectors. As a non-Annex 1 country with sustained growth, the UAE anticipates significant economic and population expansion by 2035, including growth in heavy-emitting sectors. Efforts to reduce emissions across government entities have been fast-tracked, while alternative means to help abate existing emissions has become integral.</p> <p>Further information can be found in Chapter 2.</p>
b	Fairness considerations, including reflecting on equity;	Although the UAE accounts for around 0.3% of global cumulative CO2 emissions, significant ambitions are being raised across the whole-economy to reduce its emissions by 47% compared to the 2019 baseline.
c	How the Party has addressed Article 4, paragraph 3, of the Paris Agreement;	UAE's NDC is compliant to of Article 4, paragraph 3 of Paris Agreement. Chapter 4.1 National target discusses how UAE's topline GHG target is enhanced compared to the last submission. The UAE is committed to support global efforts to keep 1.5°C within reach. After its initial NDC in 2016, which focused on sector-specific targets for clean and renewable energy, the UAE made significant progress by introducing economy-wide emission reduction targets in its second NDC in 2020. These targets were defined as reductions from a business-as-usual scenario. In 2022, the UAE heightened the ambition of these targets with a revised second NDC. The UAE further solidified its commitment by unveiling a strategic initiative aimed at achieving net zero emissions by 2050 through transformation of all sectors of the economy. The Third Update of the Second NDC, submitted in 2023, had set absolute emission reduction targets based on a 2019 baseline, replacing the previous business-as-usual reference.
l	How the Party has addressed Article 4, paragraph 4, of the Paris Agreement;	UAE's NDC is an absolute economy-wide, in compliance with Article 4.4 of Paris Agreement. See also 6(c)
e	How the Party has addressed Article 4, paragraph 6, of the Paris Agreement.	Not applicable
7. How the nationally determined contribution contributes towards achieving the objective of the Convention as set out in its Article 2:		
a	How the nationally determined contribution contributes towards achieving the objective of the Convention as set out in its Article 2;	This NDC represents UAE's contribution to the objective of the Convention as set out in Article 2. Chapter 4 'Mitigation' elaborates on mitigation ambition, which builds on the UAE's wider Net Zero by 2050 objective.
b	How the nationally determined contribution contributes towards Article 2, paragraph 1(a), and Article 4, paragraph 1, of the Paris Agreement.	In the context of the UAE's national circumstances as outlined in Chapter 2, This NDC is consistent with Article 2.1(a) to hold the increase in the global average temperature to well below 2 °C above pre-industrial levels and pursuing additional efforts to help limit temperature increase to 1.5 °C above pre-industrial levels. UAE has committed to pursuing net zero emissions and its pathway is communicated in the LTS submission to the UNFCCC – which will also be revisited to consider updates. This NDC puts the UAE on a path to net-zero emissions by 2050.

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