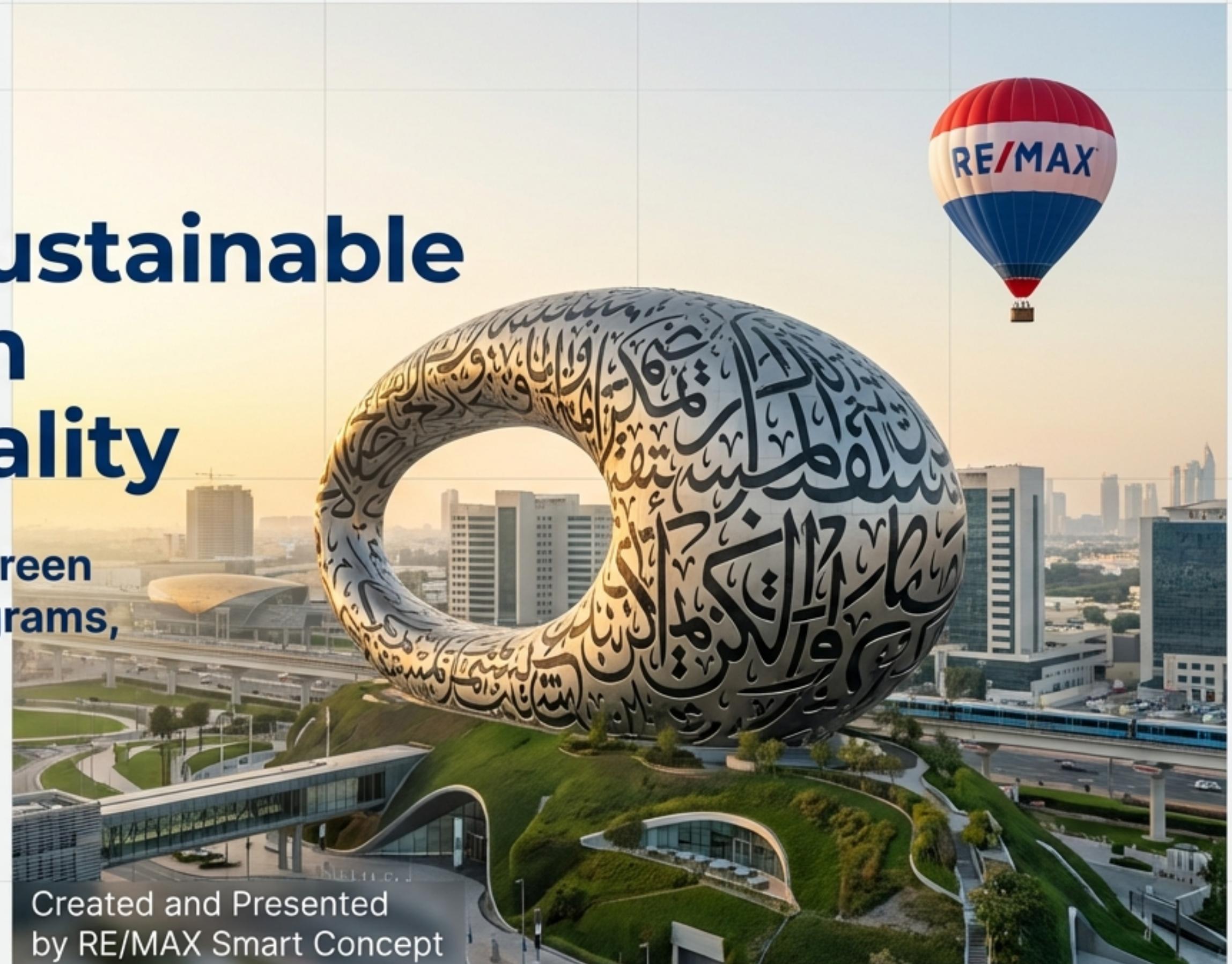


The UAE's Sustainable Future: From Vision to Reality

An Intelligence Report on Green Regulation, Smart City Programs, and Flagship Projects

Human-led intelligence
supported by AI precision.



A Unified National Strategy for a Sustainable Future

The United Arab Emirates is executing a comprehensive, multi-layered strategy to achieve full decarbonisation and establish itself as a global leader in sustainable urban development. This report examines the four core pillars of this transformation, moving from federal vision to tangible reality.

1. The Federal Vision

National strategies and global commitments driving the agenda.

3. The Technology Enablers

Smart city platforms and digital twins optimizing the urban landscape.

2. The Regulatory Framework

Mandatory green building codes transforming construction.



4. The Flagship Projects

Real-world examples of clean energy and sustainable districts.



8.1 | The Federal Vision: Net Zero & Clean Energy

UAE Net Zero 2050

The federal climate strategy filed with the UNFCCC, committing all 7 emirates to full decarbonisation by 2050.

UAE Energy Strategy 2050

The updated 2023-2024 plan targeting a **tripling** of renewable capacity.

Major Investment

A commitment of **AED 150-200 Billion** in the energy sector by 2030 to achieve these goals.

8.1 | The Global Catalyst: COP28 and ESG Integration

The COP28 'UAE Consensus' served as a major accelerator, fast-tracking the alignment of national policy with global sustainability targets.

Policy Acceleration

Renewables, green finance, and low-carbon industrial growth are now central to national policy.

Market Integration

Net Zero implementation is now directly linked to:

- ESG reporting requirements
- Sustainable finance frameworks
- Nationwide green building compliance



8.2 | The Regulatory Framework: Green Building Codes in Abu Dhabi & Dubai



Abu Dhabi - Estidama

System: Estidama Pearl Rating System.

Mandate: Minimum **1 Pearl** required for all new buildings.

Government Standard: Minimum **2 Pearl** for all government-funded buildings.

Scope: Applies to all buildings, villas, and new communities.



Dubai - Al Sa'fat

System: Al Sa'fat Green Building System.

Mandate: **Mandatory** for all new construction.

Status: Updated technical guide is now in force.

Integration: Fully integrated with Dubai's smart permitting platforms.

8.2 | Nationwide Adoption: Green Regulations Across the Emirates

Ras Al Khaimah: Mandatory **Barjeel** green building code, part of the RAK Energy Efficiency & Renewables Strategy 2040.

Ajman: Over **8,300+** green-certified buildings reported in 2025 under its emirate-level sustainability standards.

Sharjah: Driven by 'Sharjah Sustainable City' and efficiency initiatives managed by SEWA and the urban planning authority.

Umm Al Quwain: Blue Economy Strategy (2031) incorporates rules for coastal urban resilience and sustainability.

Fujairah: Focus on energy efficiency and hybrid clean-energy integration linked to major power and port projects.



8.3 | The Technology Enablers: Smart Cities & Digital Twin Programs

Dubai: The Fully Digital Emirate

Governance: Smart government under **Digital Dubai** is fully paperless.

Platform: The **Dubai Digital Twin** ('Dubai Here' + 'Dubai Live') is operational.

Applications: Used for inspection, mobility planning, utilities management, and AI-based urban monitoring.

Abu Dhabi: The Unified Platform

Governance: The Department of Municipalities & Transport (DMT) is deploying the **Abu Dhabi Digital Twin**.

Platform: A unified smart-city platform.

Applications: Features AI analytics linked to mobility and public asset management.

8.3 | Nationwide Integration of Smart Infrastructure

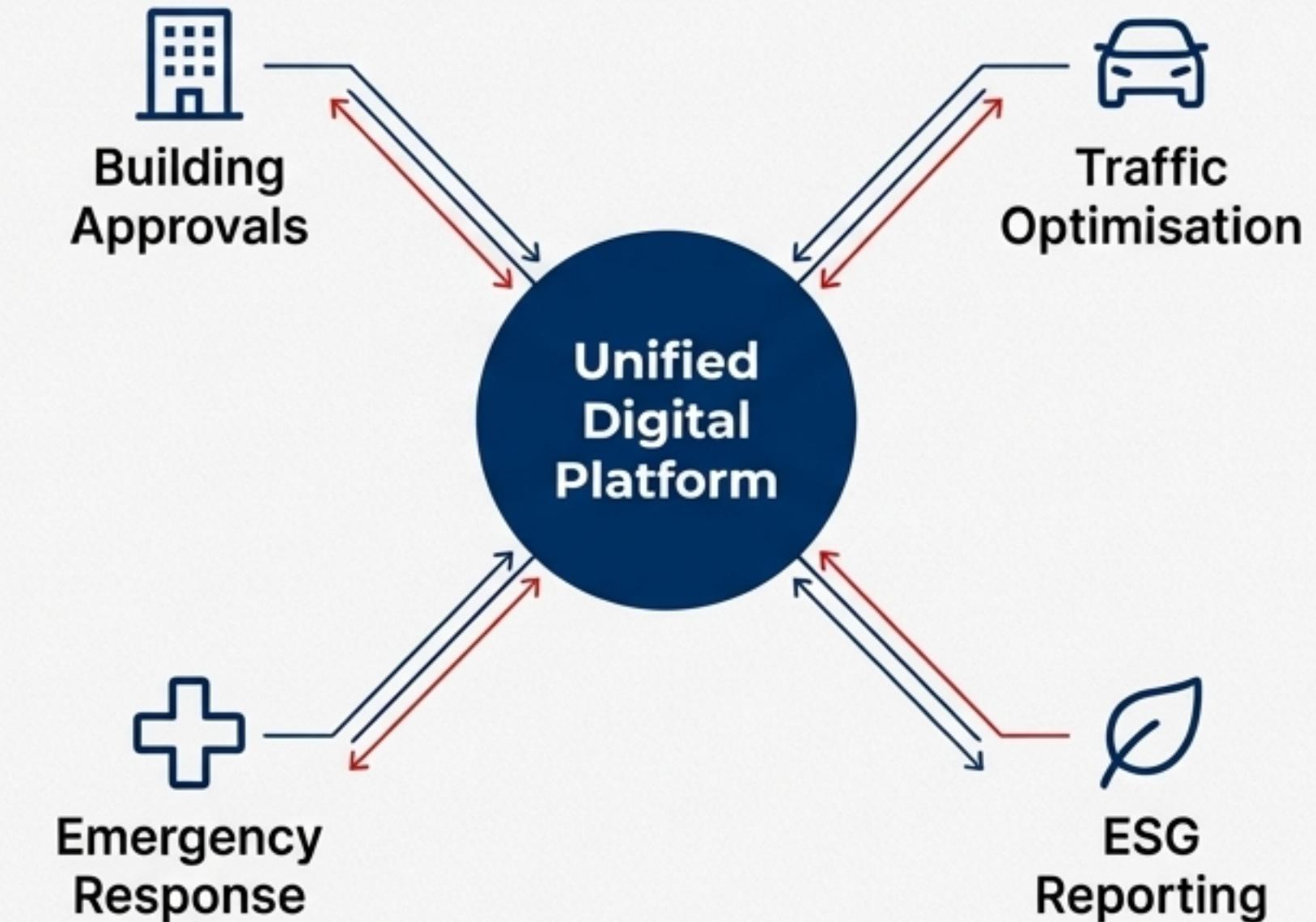
Northern Emirates Rollout:

Sharjah, RAK, and Ajman are actively rolling out smart-services portals, GIS platforms, and digital permit systems. These systems are aligned with federal interoperability standards like **ICP / UAE Pass**.

Embedded Nationwide Functionality:

Smart infrastructure is now a standard component of:

- Building approvals and permitting
- Real-time traffic optimisation
- Emergency management and response
- Automated ESG reporting for buildings and assets





8.4 | The Tangible Reality: Pioneering Low-Carbon Districts

Primary Focus: Masdar City (Abu Dhabi)

The UAE's flagship **low-carbon district** and global testbed.

Serves as a hub for innovation in mobility, circular economy principles, and net-zero buildings.

Other Flagship Examples

- **Sharjah Sustainable City:** The emirate's premier model for **net-positive energy communities**, featuring integrated solar, water reuse, and car-lite mobility solutions.
- **Ajman's Compliance:** Reinforces **low-carbon construction norms** with thousands of compliant **green buildings** under its sustainability program.

8.4 | Powering the Vision: Clean Energy Flagships

Masdar (Company): Announced a **1 GW 'always-on'** clean power facility, a hybrid of solar and storage, scheduled for completion by 2027 to support baseload renewable energy.



Ras Al Khaimah: The Energy Efficiency & Renewables Strategy 2040 targets aggressive savings:

- **30%** electricity savings
- **20%** water savings
- **20%** renewable energy share (vs. 2017 baseline)

Fujairah: Commissioned the **2.4 GW** F3 high-efficiency power plant in 2025, designed to support renewable integration and bio-fuel developments at Fujairah Port.



8.4 | A Unique Focus: The Blue Economy & Coastal Resilience

Focus: Umm Al Quwain Blue Economy 2031

Core Concept: A strategic initiative that directly ties the health of ocean ecology to the development of new economic sectors.

Key Growth Areas:

- Sustainable Aquaculture
- Eco-tourism
- Green Ports and Logistics

Overarching Goal: To build coastal urban resilience while creating new, sustainable economic value.

The UAE's Integrated Sustainability Ecosystem

The UAE's approach is not a series of isolated projects, but a deeply integrated ecosystem where federal vision, mandatory regulation, advanced technology, and strategic investment work in concert.



This cohesive framework positions the UAE as a global benchmark for executing a national-scale transition to a smart and sustainable economy.

8.5 | References

Federal Policy

- UAE Net Zero 2050 & federal climate policy → UAE Cabinet, MoEI, UNFCCC filings.
- UAE Energy Strategy 2050 (updated) → MoEI 2023-24, u.ae portal.
- COP28 "UAE Consensus" → UNFCCC, WAM.

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- Dubai Al Sa'fat → Dubai Municipality.
- RAK Barjeel & EE&R Strategy 2040 → RAK Municipality / REEM.
- Ajman green building report → Ajman Municipality 2025.

Smart Cities

- Digital Dubai paperless + Dubai Digital Twin → Digital Dubai Authority / Dubai Municipality.
- Abu Dhabi Digital Twin → DMT, GITEX announcements 2024-25.

Projects

- Masdar 1GW hybrid renewable facility → Masdar 2025 release.
- Sharjah Sustainable City → Sharjah Investment & developer reports 2025.
- Fujairah F3 plant + bio-bunker pilot → WAM / operator releases 2025.
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