

# Sustainability and Prosperity in Unison: The UAE's Path to Ambitious Targets through Circular Economy and Responsible Practices

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## Abstract

This article examines the United Arab Emirates (UAE) approach to the concept of circular economy to balance economic prosperity with sustainability. The UAE has set ambitious sustainability targets, including reducing greenhouse gas emissions and increasing the share of clean energy. The UAE has implemented various economic incentives to achieve these targets, such as carbon tax and subsidies for renewable energy investments. Business guidelines, such as the Emirates Green Building Council's rating system and Dubai Sustainable Industry Platform, have also been introduced to encourage sustainable practices among companies. The research shows the UAE's excellent approach to a circular economy has helped promote sustainable development and keep economic growth strong. The country's efforts have led to more industries using renewable energy and environmentally friendly practices. However, the study also identifies some challenges that need to be addressed, such as the need for more awareness and implementation of circular economy principles in some sectors. The research concludes that the UAE's approach to a circular economy is a good way to find a balance between economic growth and environmental protection. It shows how important ambitious goals, economic incentives, and business guidelines are for encouraging businesses and people to act sustainably. The study suggests that the UAE can continue to lead the way in the circular economy by addressing the challenges and promoting circular economy principles more widely.

**Keywords:** Business Guidelines, Circular Economy, Economic Incentives, Sustainability, United Arab Emirates.

## Introduction

In an era marked by profound global transformations and burgeoning development, the imperative of sustainable progress takes centre stage. Notably, the United Arab Emirates (UAE), symbolic of dynamic change and innovation, has emerged as a proactive advocate of sustainable development. Within the contemporary international landscape, the intertwined narratives of sustainability and the circular economy have gained increasing salience. This evolution is underscored by the growing urgency to safeguard the Earth's finite natural resources and delicate ecosystems. As the UAE continues to assert its commitment to environmental stewardship and economic vitality, this article explores the UAE's multifaceted approach to the circular economy. This strategic framework is meticulously designed to harmonise the pursuit of economic prosperity with the imperatives of sustainability, exemplifying the UAE's resolute commitment to a brighter and more sustainable future (1).

The UAE's comprehensive approach to the circular economy is examined in this article, which provides a detailed account of sustainability targets, economic incentives, and business guidelines. This report emphasises concrete results, cooperative systems, and obstacles encountered in pursuing sustainability, illustrating exemplary approaches via case studies such as Dubai Municipality and Bee'ah. In doing so, it offers an extensive examination of the UAE's proactive stance in redefining sustainability, illuminating the tangible outcomes of its efforts, and presenting practical business guidelines that are steering the nation towards a sustainable future. Additionally, this article underscores the inherent challenges in promoting sustainability within the UAE and the collaborative mechanisms to address these challenges. By elucidating the UAE's journey towards achieving a harmonious balance between economic growth and environmental protection, this exploration ultimately accentuates the nation's pivotal role in shaping the global landscape of sustainability (2).

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## **Redefining Sustainability**

In theory, sustainability is the ability to meet the needs of the present without compromising the ability of future generations to meet their own needs. It involves balancing economic, social, and environmental considerations for sustainable development. The UAE has recognised the importance of sustainability and has made significant efforts to promote it. The country has set ambitious sustainability targets, including reducing greenhouse gas emissions by 23.5% by 2030, increasing the share of clean energy to 50% by 2050, achieving zero waste to landfill, and many more (3). The UAE's commitment to sustainability is reflected in the establishment of the Ministry of Climate Change and Environment 2011 (4), which oversees its efforts to reduce its environmental footprint. An article (5) offers insights into the UAE's innovative strategies for attaining its sustainability objectives. This study investigates the efficacy of policy measures and the integration of advanced technologies in fostering sustainable practices. Al-Mansoori and fellow authors have comprehensively evaluated the UAE's dedication, praising its multifaceted approach that extends beyond specific objectives to incorporate adaptable resolutions for ecological dilemmas.

## **Conviction and clarity on sustainability**

The UAE's ambitious targets have been instrumental in driving sustainability efforts in the country. According (6), the UAE's targets for renewable energy and sustainable transport have led to significant investments in these sectors, reducing the country's dependence on fossil fuels and lowering its carbon footprint. The UAE has also set targets for waste reduction and recycling, which have led to the development of advanced waste management systems and increased recycling rates (7). According to the UAE's National Climate Change Plan, the country aims to reduce greenhouse gas emissions by 23.5% by 2030. To achieve this target, the UAE invests in renewable energy sources, such as solar and wind energy (8). The country's target is to increase the share of clean energy to 50% by 2050 (9). By setting ambitious targets, the UAE government has created a clear path towards sustainability, encouraging businesses and investors to prioritise sustainable practices (10). These sustainability

efforts have helped the UAE achieve its environmental goals and contributed to economic growth and job creation (11).

## **Understanding Circular Economy**

A circular economy is an economic model that aims to minimise waste and maximise the use of resources by keeping products and materials in use for as long as possible. It involves designing out waste and pollution, keeping materials in use, and regenerating natural systems. The circular economy is gaining momentum globally, and the UAE is no exception. The country has recognised the potential of the circular economy to reduce waste and pollution and promote sustainable development. In 2018, the UAE launched its National Circular Economy Policy to promote sustainable consumption and production and reduce waste (12). The policy includes initiatives such as reducing food waste, promoting the use of recycled materials, and encouraging the development of sustainable products (13).

By employing a multifaceted strategy, the UAE's sustainability initiatives intricately integrate the tenets of the circular economy. Through implementing sustainable consumption and production practices, advocacy for recycling, and the establishment of ambitious waste reduction goals (14), the nation has proactively embraced the fundamental principles of the circular economy. The United Arab Emirates' dedication is exemplified by the 2018 National Circular Economy Policy, which delineates endeavours to reduce waste, promote the utilisation of recycled materials, and facilitate the advancement of sustainable products. Furthermore, the circular economy is effectively implemented through economic incentives such as the carbon tax, subsidies for renewable energy, and the Dubai Green Fund. These initiatives promote the adoption of sustainable practices by businesses and facilitate the efficient utilisation of resources (15).

## **Economic incentives**

The UAE has implemented various economic policies to encourage sustainable development and create a functional circular economy. One of the most significant measures is the introduction of the carbon tax in 2018. The carbon tax charges companies that emit more than 25,000 tons of carbon dioxide annually. The tax is set at AED 50

per ton of carbon dioxide and is expected to generate AED 1.2 billion annually. The revenue generated from the carbon tax is used to fund sustainable projects and initiatives. In addition to the carbon tax, the various emirates (states) have introduced subsidies and incentives for renewable energy investments. For instance, the Dubai Electricity and Water Authority (16) offers a net metering scheme for rooftop solar installations, which allows homeowners to sell excess electricity back to the grid. DEWA also offers a solar water heater program, which gives homeowners a subsidy for installing solar water heaters (17). Furthermore, the country has implemented a range of economic incentives to encourage sustainable practices and reduce the carbon footprint of businesses and industries. One such incentive is the Dubai Green Fund, which provides financing to companies for installing renewable energy systems, such as solar panels, and energy-efficient technologies to reduce energy consumption and carbon emissions (18). Another incentive is the Energy Efficiency Program, which provides low-interest loans to finance energy-efficient buildings, including residential and commercial properties (19). This program aims to reduce the energy consumption of buildings by 40% by 2030 and to promote sustainable construction practices that prioritise energy efficiency.

The UAE government also exempts hybrid and electric vehicles from registration fees, reducing purchasing costs and encouraging adoption (20). Moreover, the government has implemented a carbon pricing scheme that puts a price on carbon emissions and incentivises companies to reduce their greenhouse gas emissions (21). This scheme is intended to encourage businesses to adopt more sustainable practices and promote cleaner technologies and fuels. These economic incentives, coupled with the ambitious targets and business guidelines, have helped to promote sustainable practices across different sectors of the UAE economy and have made the country a more attractive destination for sustainable investment. They demonstrate the government's commitment to sustainable development and provide businesses and industries with the support and resources they need to transition to more sustainable practices (22).

## Practical Business Guidelines

The UAE has also introduced various business guidelines to promote sustainable practices among companies. One of the most significant initiatives is the Emirates Green Building Council's rating system, a voluntary certification program that assesses the sustainability of buildings (23). The rating system covers various aspects of sustainable building, including energy efficiency, water conservation, and indoor environmental quality as per Emirates Green Building Council. The EGBC also provides training and certification for professionals in the construction industry to promote sustainable building practices. Another initiative is the Dubai Sustainable Industry Platform, which is a program that aims to promote sustainable practices in industries such as construction, manufacturing, and transportation (24). The program provides businesses with tools and resources to improve their sustainability practices and reduce their environmental impact (25). It is also notable that the Abu Dhabi Sustainability Group (ADSG) provides guidance for businesses in Abu Dhabi on sustainability reporting and performance, including carbon footprint measurement and reduction, water conservation, and waste reduction (26).

Here are the specific initiatives that the UAE has implemented to promote the circular economy and sustainability:

1. Encouraging renewable energy: The UAE has set a target of generating 50% of its energy from renewable sources by 2050. This will reduce the dependence on fossil fuels and promote a sustainable energy system that can power circular economy practices, as per UAE Energy Strategy (27).
2. Introduced economic incentives: The UAE government has introduced economic incentives such as subsidies, tax exemptions, and grants to encourage businesses to adopt circular economy practices. For example, the Dubai Industrial Strategy 2030 includes a Dh1.3 billion fund to support the adoption of advanced technologies and sustainable practices in manufacturing as per Dubai Industrial Strategy 2030.
3. Developing sustainable infrastructure: The UAE has invested heavily in sustainable infrastructure, such as eco-friendly buildings and public transportation systems. For

- example, the Masdar City project in Abu Dhabi is a model for sustainable urban development, featuring energy-efficient buildings, renewable energy sources, and water conservation measures (28).
4. Promoting waste reduction and recycling: The UAE has implemented programs like the Zero Waste Project mentioned earlier to promote waste reduction and recycling. The country also has several recycling plants, such as the Tadweer recycling plant in Abu Dhabi, which processes construction and demolition waste into reusable materials.
  5. Collaboration between government and private sector: The UAE government has encouraged collaboration between the public and private sectors to promote the circular economy. For example, the UAE Ministry of Climate Change and Environment has partnered with companies like Bee'ah to develop sustainable waste management solutions (29).

By having these initiatives, the UAE has created an environment that fosters innovation and encourages businesses to adopt circular economy practices. This will benefit the environment and contribute to the country's economic growth and long-term sustainability.

## Cases and Best Practices

The UAE has several case examples of circular economy initiatives. One example is Bee'ah, a waste management company implementing several circular economy practices. Bee'ah has developed a waste-to-energy plant that converts waste into energy and a material recovery facility that recovers recyclable materials from waste. The company has also introduced a fleet of electric vehicles for waste collection (30). Another example is the Dubai Municipality, which has introduced a program to convert organic waste into compost. The program is part of the municipality's Zero Waste Project, which aims to divert 75% of the city's waste from landfills by 2021 (31). The program involves collecting organic waste from homes and businesses and processing it in a composting facility. The resulting compost is used as a soil amendment for landscaping and agriculture.

The following are the three of the most result-oriented and latest best practices in sustainability that have been implemented in the UAE:

- A. Green Public Procurement: The UAE government has implemented policies to promote sustainable practices in procuring goods and services. Under this policy, the government requires suppliers to meet certain sustainability criteria, such as using environmentally friendly materials and minimising waste (Ministry of Climate Change and Environment, 2021). This policy has effectively promoted sustainability in the supply chain and encouraged suppliers to adopt sustainable practices.
- B. Solar Energy: The UAE has significantly invested in solar power and is a global leader in renewable energy (32). The country has implemented several initiatives to promote the use of solar energy, such as the Shams Dubai program, which encourages homeowners and businesses to install solar panels and connect them to the grid (DEWA, 2021). The UAE's investment in solar energy has not only contributed to reducing greenhouse gas emissions but has also created new job opportunities and reduced reliance on fossil fuels.
- C. Sustainable Transport: The UAE has implemented several initiatives to promote sustainable transport, such as the Dubai Metro and the Abu Dhabi Public Transports. These initiatives have reduced traffic congestion and air pollution and encouraged residents to use public transport instead of private cars (Department of Transport Abu Dhabi, n.d.). The UAE government has also incentivised the use of electric vehicles by providing subsidies for electric cars and installing electric vehicle charging stations across the country (33).

All these initiatives have effectively promoted sustainable practices and reduced the UAE's carbon footprint. By adopting these best practices, the UAE positions itself as a sustainability leader and demonstrates its commitment to achieving a more sustainable future.

## Assessment and Practical Challenges

The UAE's efforts to promote sustainability through practical efforts and policies have been accompanied by several challenges that must be addressed. One of the primary challenges is the lack of awareness and understanding of

sustainability among the public and private sectors. This makes implementing sustainable practices and policies difficult (Alkhaldi et al., 2021). Financial and technical barriers to implementing sustainable practices include high initial costs and limited access to renewable energy technologies (Kamal, 2021). The UAE also faces water scarcity and desertification challenges, which require innovative solutions to ensure sustainable water management and land use (34). To evaluate sustainability initiatives in the UAE, critical performance indicators (KPIs) including the implementation of clean energy goals and the reduction of greenhouse gas emissions are utilised by industry standards and principles. These metrics are consistent with global climate objectives as exemplified by the Paris Agreement, demonstrating the UAE's dedication to such accords. The accomplishments of the circular economy, as assessed by waste diversion rates and sustainable product development, demonstrate compliance with the principles delineated by the Ellen MacArthur Foundation. Moreover, economic indicators, such as the revenue generated from carbon taxes, assess the economic feasibility of sustainable practices, thereby guaranteeing conformity with universal economic tenets. Adopting this strategic approach establishes the UAE as a conscientious and progressive contributor to the worldwide dialogue on sustainability.

Despite the country's substantial investments in desalination technologies, water scarcity remains a critical issue that needs to be addressed through efficient water use and management practices. Desertification, caused by climate change and overuse of natural resources, is another significant challenge that requires sustainable land management practices to mitigate its impact on the environment and society. Importantly, there is a need for greater collaboration between the public and private sectors to develop and implement sustainable policies effectively. The success of sustainability initiatives depends on the involvement and engagement of all stakeholders, including governments, businesses, and the public. The UAE government has taken several steps to promote collaboration, such as establishing the UAE Sustainable Development Goals (SDGs) Council to coordinate efforts towards achieving the SDGs (35).

## Conclusion and the way forward

The UAE's approach to a circular economy is a promising model for balancing prosperity and sustainability. All these are important steps towards achieving sustainable development and reducing the negative impact of human activities on the environment. The country has set ambitious targets, implemented economic incentives, and introduced business guidelines to promote sustainable development. The UAE's efforts have resulted in increased adoption of renewable energy and sustainable practices in various industries. However, some challenges still need to be addressed, such as the lack of awareness and implementation of circular economy principles in some sectors. All of these lead to say that the UAE's approach to a circular economy can serve as an example for other countries looking to balance economic growth with sustainability (36).

Although sustainable and circular economy practices are both by global standards, they differ in the focal point they place on. The UAE has made significant progress in promoting sustainability through its ambitious targets, economic incentives, and business guidelines. To continue this progress, the UAE could develop areas such as the circular economy, renewable energy, and sustainable policies and regulations. The government could work with businesses and industries to promote the reuse and recycling of materials and reduce waste, increase investment in electric vehicle infrastructure and public transport systems powered by renewable energy, and prioritise sustainability in construction and urban planning (37). Through these efforts, the UAE can continue to position itself as a leader in sustainability and make progress towards achieving its targets for a more sustainable future. Sustainable practices place equal importance on material regeneration and resource efficiency, while circular economy practices focus more on addressing material regeneration and environmental, social, and economic concerns. Both approaches promote responsible economic models on a global scale and contribute to achieving global sustainability objectives.

## Abbreviations

Nil

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Nil

## Contribution of Authors

Not applicable.

## Conflict of Interest

The Authors declare that there is no conflict of interest among them.

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