Smart and Sustainable Mobility IN UAE

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Introduction

The United Arab Emirates has been making significant progress in promoting smart and sustainable mobility as part of the country's Net Zero by 2050 strategic initiative aiming to reach zero carbon emissions by 2050.

One of the major initiatives taken by the UAE government is the promotion of electric vehicles (EVs). The country has set a target to have at least 10% of all vehicles on the road to be electric by 2030.

Source: Media

To achieve this, the government has offered incentives such as free registration, free parking and reduced charging and toll fees for EVs. In addition to EVs, the UAE has also invested in other sustainable transportation modes such as buses and the Dubai Metro system that has significantly reduced the number of cars on the road.

Source: Media

The Dubai 2040 Urban Master Plan maps out a comprehensive plan for sustainable urban development in Dubai. One of the key areas of focus in the Master Plan is sustainable mobility, as Dubai aspires to be a global sustainable transportation hub. The Dubai Future Foundation (DFF), a think tank and research organization that focuses on shaping the future of Dubai and the UAE, has a transportation and mobility program that focuses on developing innovative solutions and technologies to enhance transportation and Mobility.

The program includes various initiatives such as:

- Dubai Autonomous Transportation Strategy: This strategy aims to have 25% of all transportation in Dubai to be autonomous by 2030. This strategy aims to introduce autonomous vehicles across different modes of transportation including taxis and buses.
- Hyperloop: The DFF is exploring the potential of the hyperloop technology that will help passengers and cargo to travel between Dubai and Abu Dhabi in 12 minutes.
- Smart Mobility: DFF is also developing smart transportation platform that integrates various modes of transportation and provide real-time information to passengers.

Leading Sub-Sectors

There are many opportunities across segments of smart and sustainable mobility

- **Alternative Fuel Vehicles:**
- **Electric Vehicles:**

Source: Media

Dubai Roads and Transport Authority (RTA) successfully converted 50% of the Dubai taxi fleet into hybrid vehicles. It intends to convert the entire taxi fleet to hybrid and electric vehicles by 2027. In 2019, RTA launched a trial run of two electric buses charged by a standing electric charger. Dubai has a growing number of EVs on the road, with 7,331 registered cars.

Source: Media

According to the Dubai Water and Electricity Authority (DEWA), the number of EVs in Dubai is expected to reach 12,852 by 2025. This supports Dubai's Green Mobility Strategy 2030, mandating 30% of public sector vehicles and 10% of all vehicle sales to be electric and hybrid by 2030.

Source: Media

Abu Dhabi has made significant increases to the EV fleet. There are 2,441 EVs, 4,138 hybrid vehicles and 9,412 Condensate Natural Gas and natural gas vehicles. However, with a total vehicle population of more than 1.2 million vehicles, EVs represent less than 1.3% of total vehicles, and hence there is significant room for additional growth.

Source: Media

- **Hydrogen-Powered Vehicles:**

The UAE is exploring other transportation systems running on alternative fuels. The UAE cabinet approved a nationwide system for hydrogen vehicles, as the country is looking to increase production of blue and green variants of the fuel. In December 2019, it launched the trial run of the first hydrogen taxi in the Middle East.

Source: Media

The Integrated Transport Center of Abu Dhabi (ITC Abu Dhabi), Abu Dhabi transportation authority, is exploring and investigating opportunities of hydrogen fuel technology as part of a wider investigation into sustainable mobility. Hydrogen vehicle opportunities include government and non-government buses, truck and taxi fleets.

Source: Media

ADNOC Distribution, the UAE's largest fuel distributor, signed an agreement with Abu Dhabi National Energy Company (TAQA), one of the largest integrated utility companies in the EMEA region, to work together to establish a mobility joint venture, E2GO, to build and operate electric vehicle charging infrastructure in Abu Dhabi and the wider UAE.

Source: Media

- **Hydrogen fueling stations:**

Dubai's DEWA and Emirates National Oil Company Group (ENOC), Dubai's integrated oil and gas company, have teamed up to develop hydrogen fueling stations for vehicles in the UAE. DEWA and ENOC will conduct a joint feasibility study for the establishment, development, and operation of a pilot project for the use of hydrogen in mobility. The project will use DEWA's existing green hydrogen production facility at the Mohammed bin Rashid Al Maktoum Solar Park and ENOC's knowledge of the fuel market to build a hydrogen fueling station.

Source: Media

Abu Dhabi National Oil Company (ADNOC) and Masdar, the Abu Dhabi-based renewable energy giant, are also partnering to build hydrogen stations. Masdar aims at producing up to one million tons of green hydrogen per year by 2030.

Source: Media

- **Intelligent Transportation Systems (ITS):**

The UAE is investing in ITS technologies, including intelligent traffic management systems and dynamic pricing for toll roads, to improve the efficiency of transportation networks and reduce congestion. The UAE has also invested in smart road infrastructure to improve transportation efficiency and safety. RTA has launched several initiatives such as the Smart Traffic System, which uses real-time data to manage traffic flow, and the Smart Signaling System, which adjusts traffic signals based on traffic conditions.

Source: Media

- **Autonomous Vehicles (AVs):**

The UAE is also exploring the use of autonomous vehicles. Dubai has a Self-Driving Transport Strategy that aims at converting 25% of total trips in Dubai into self-driving transport trips across different modes of transport by 2030. RTA has plans to introduce 4,000 autonomous vehicles for taxi services by 2030. ITC Abu Dhabi is also developing its Autonomous Vehicle regulatory framework and a road map which incorporates all types of AVs into Abu Dhabi's transport system.

Source: Media

- **Advanced Air Mobility:**

Dubai has launched a project to build a $40 million Advanced Air Mobility (AAM) integrator center as part of Mohammed bin Rashid Aerospace Hub. The center, which will be home for the whole advanced air mobility ecosystem, is designing the vision of a network of vertiports.

Source: Media

Opportunities

- Electric and hydrogen-fueled vehicles, including cars, trucks and buses.
- Clean marine transport technologies, including for passengers and cargo.
- Sustainable air mobility, including air taxis.
- Charging/fueling infrastructure for electric and hydrogen vehicles.
- Alternative fuels including biofuels and hydrogen.
- Intelligent transportation systems.
- Safety technologies.

Source: Media

Thank you!

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