



Role and Objectives of UAE's Aviation Diplomacy

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Summary

- The key concept in this Insight is Aviation Diplomacy, which encompasses the use of civil aviation as an instrument to influence and shape air transport agreements, laws, and regulations. It includes bilateral and multilateral agreements; open skies agreements; economic and trade relations; political and diplomatic leverage; health safety and security cooperation; crisis management and humanitarian aid; and environmental agreements, policies, and frameworks to reduce the environmental impact of aviation.
- Aviation Diplomacy plays an important role as a strategic instrument of national development, national image projection and as a burgeoning yet vital element of multilateral diplomatic processes. The civil aviation industry in the United Arab Emirates (UAE) is a vital contributor to the economy and its success is intertwined with the long-term economic diversification aspirations of the country. As of 2019, the industry accounted for more than \$19 billion of the UAE's total GDP.¹ The gross value-added contribution to the GDP, when combined with foreign tourism, is \$47.4 billion or 13.3% of the GDP. The International Air Transport Association estimates this number to increase to \$128 billion over the next two decades.²
- The global paradigm of sustainable development poses novel challenges to the global aviation industry, which is inexorably connected to all major international economic development sectors, including tourism. Prior to the COVID-19 pandemic, air travel encompassed a staggering 128,000 flights, 12.5 million passengers and \$18 billion in world trade daily.³
- The aviation industry is now also seeking to innovate, improve and increase environmental sustainability as it is responsible for producing roughly 2-3% of all human-induced carbon dioxide (CO₂) emissions. The prospects of net-zero emissions and implementation of sustainable aviation fuel (SAF) are complicated by estimates that anticipate the global fleet of aircrafts to more than double by 2040, thereby potentially increasing emissions to anywhere between 4-20%.⁴
- The UAE's flagship carriers play a vital role in projecting the national image of the country and the national development interests of the state. Their continued success hinges on their ability to utilise aviation diplomacy to innovatively strike an effective and efficient balance between the national interest and the global paradigm of sustainable development.
- The Insight ends with some recommendations for policymakers, including:
 - Foster stronger international collaborations and public-private partnerships;
 - Invest in sustainable aviation technologies;
 - Enhance aviation infrastructure;
 - Advocate for regulatory frameworks for environmental sustainability;
 - Cultivate diplomatic engagement for sustainable aviation;
 - Invest in human capital;
 - Raise sustainability awareness.

The Issue

The emergence of aviation diplomacy constitutes a nascent concept that is reflective of broader global challenges such as climate change and sustainable development that now shape the geopolitical milieu. The complexities, interconnectedness and enormity of these transnational challenges, have in effect, fundamentally altered traditional paradigms of diplomacy. In responding to these challenges, diplomacy has had to increasingly entertain and incorporate new forms of diplomatic engagement. Aviation Diplomacy thus represents a novel form of diplomatic engagement that is now gaining significance within diplomatic practices, processes and structures.⁵ It can be understood as the strategic use of civil aviation in diplomatic and geopolitical endeavours.

The emergent concept can be characterised by three primary facets:

- (1) using aviation as a diplomatic tool in foreign policy;
- (2) utilising aviation to enhance a nation's international image; and
- (3) recognising aviation entities as novel actors within the multilateral machinery of international diplomacy.⁶

As a foreign policy tool, aviation diplomacy encompasses negotiations and agreements between states on bilateral air service agreements. It can further be understood in relation to the projection of national image and identity. Herein, airlines serve as de facto national

ambassadors through their efforts to cultivate, project and disseminate a state's national image on the international stage. Lastly, and importantly, aviation diplomacy denotes the emergence of airlines as independent diplomatic subjects that are now increasingly engaging in multilateral and multistakeholder diplomatic processes with diplomatic and para-diplomatic actors.⁷

Accordingly, this Insight seeks to advance understanding on the importance of aviation diplomacy in contributing to the national development and international reputation of the UAE as well in pioneering global efforts in sustainable aviation.

Strategic Importance

The Middle East serves as a strategic global aviation hub that connects major markets in Europe and the Asia-Pacific region. The aviation industry in the Middle East accounts for roughly 5% of the global aviation market.⁸ Within the region, the UAE constitutes the largest aviation market – making up approximately 45% of the regional aviation sector.⁹ This is reflected in the fact that Dubai International Airport (DXB) has consistently ranked as the world's busiest international hub for the last decade¹⁰ and Emirates Airlines ranks at the top-end of most annual long-haul flights operated globally.¹¹ The strategic proximity of the UAE is such that it places it at a six-hour flight to roughly two-thirds of the world's population. Therefore, the UAE civil aviation industry constitutes an important and vital contributor to the national economy.

The marked growth of the aviation industry in the last several decades is further indicative of its strategic national importance in safeguarding and supporting the long-term ambitions of the UAE. As a traditionally oil-dependent economy, the UAE has steadily and innovatively introduced and implemented a wealth of policies aimed at diversifying its national economy. While tourism and transportation policies date back to the early 1970s,¹² consistent and significant investments in aviation infrastructure have continued to drive economic growth, diversification and international connectivity – which in turn has enhanced the UAE's global attractiveness for business and tourism.

Indeed, prior to the onset of the COVID-19 pandemic, the UAE aviation industry alongside its respective supply chains accounted for more than \$19 billion of the total UAE GDP. When combined with foreign tourism, this figure increased to a staggering \$47.4 billion – with 777,000 jobs being supported by the air transport sector. The International Aviation Transport Authority (IATA) estimates that in the next two decades, aviation and tourism will contribute approximately \$128 billion to UAE GDP.¹³ Such forecasts are emblematic of the continuing importance of the aviation industry – alongside more recent national diversification and development efforts, which include substantial investment in knowledge-based mechanisms such as artificial intelligence and financial technology.¹⁴

However, in recent years, the vitality and wellbeing of the aviation industry has come under heightened duress due to two critically important international developments:

(1) The COVID-19 Pandemic; and

(2) the global paradigm shift associated with the United Nations 2030 Agenda for Sustainable Development.

The COVID-19 pandemic caused unprecedented disruptions and challenges that impacted both the immediate operations and long-term strategic outlook of the global aviation industry. The imposition of sweeping travel restrictions by governments to control and prevent the spread of COVID-19 resulted in the demand for global air travel plummeting by 60% (2.7 billion passengers).¹⁵ In turn, the International Civil Aviation Organization reported that the international aviation industry incurred \$372 billion in revenue losses¹⁶ resulting in at least 170,000 layoffs, placing 1.3 million at risk, and affecting as many as 46 million additional jobs in the global economy.¹⁷

The pandemic accelerated digital transformation and increased efficiency because of the implementation of technologies aimed at minimizing physical contact. This also brought a shift in the aviation market dynamics with virtual meetings gaining favour over business travel and short-haul destinations becoming the preference for leisure travel. In addition, the temporary reduction of carbon emissions from decreased flight operations enabled the aviation industry to re-centre and intensify its focus on sustainability and net-zero emissions.¹⁸

Diplomatic Significance

There is considerable diplomatic significance attached to civil aviation. For instance, governments may enact policies to suspend or revoke air links with certain countries; they may utilize airlines and airports to project national identity; or they may engage in the provision of medical supplies, humanitarian aid and repatriation efforts to manage their international standing. The growing role of diplomacy in aviation has equally become evident in the global effort to mitigate climate change, reduce emissions and pursue sustainable aviation. The 2015 United Nations Sustainable Development Goals (UN SDGs) have amplified and politicized the importance of reducing practices that are detrimental to the environment and to the climate. This has entailed extensive diplomatic efforts to facilitate international agreements that seek to set standards for emissions produced from aviation.

The International Civil Aviation Organisation (ICAO), a specialized UN agency, has spearheaded negotiations between states leading to the 2016 Carbon Offsetting and Reduction Scheme for International Aviation (CORSIA) to facilitate and establish global standards that minimize aviation's carbon footprint.¹⁹ Importantly, diplomatic efforts have also extended to encompass technology sharing and cooperation in the development and deployment of greener aviation technologies such as sustainable aviation fuel;²⁰ the negotiation and implementation of market-based measures to promote carbon trading and offsetting; as well as the mobilisation of financial mechanisms and support to developing states to facilitate a transition to greener aviation practices.

These developments denote the importance of diplomacy vis-à-vis the politicisation of a burgeoning field that is no longer confined to discussions by technical experts. Instead, global aviation constitutes an arena that now mandates the participation of tactical experts that can strategically navigate the legal, ethical, political, and policy dimensions that accompany the pursuit of sustainable aviation. However, efforts have been complicated by the exponential demand for air travel; competing national interests; global neoliberal appetite; slow development and uptake of aviation technology, including sustainable aviation fuel; insufficient investment in clean energy; and severe time constraints to realistically achieve net-zero emissions by 2050.²¹ The complexities of these issues and their increasingly political nature indicate that any successful efforts to implement innovative and radical changes in the pursuit of sustainable aviation will necessitate widescale diplomatic activity.

Contribution to Economic Diversification

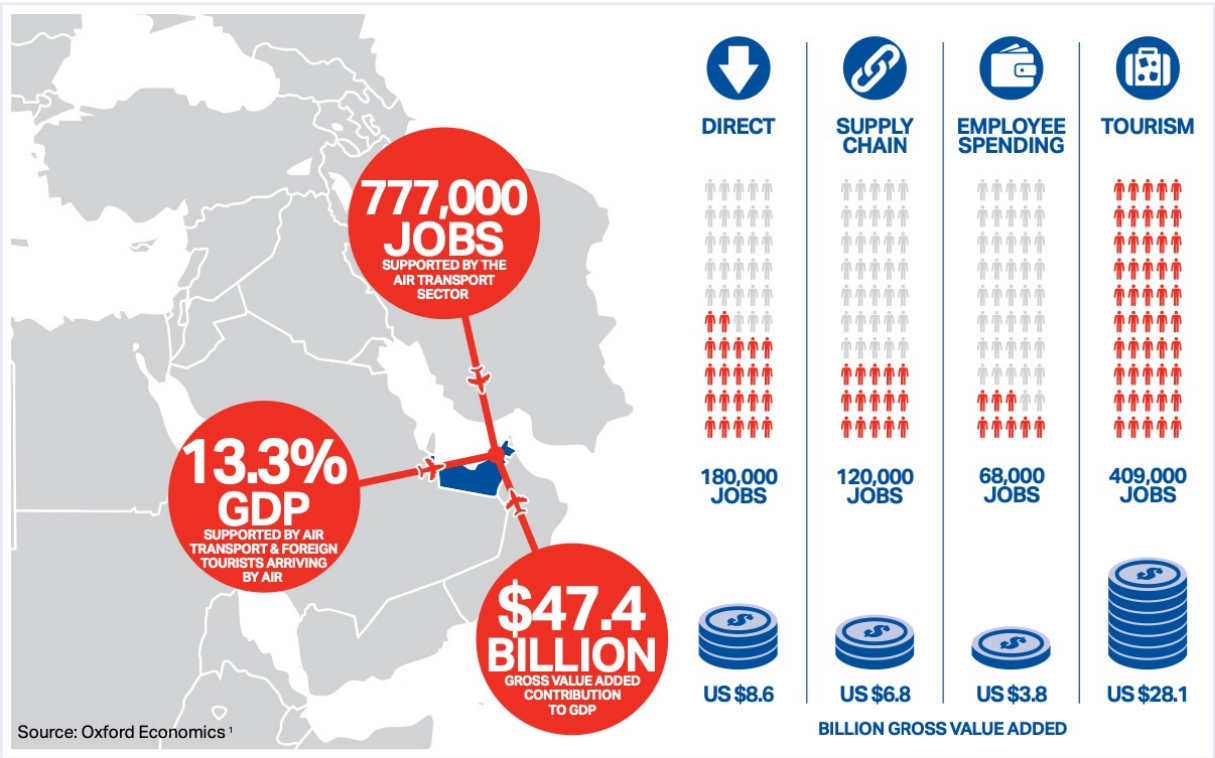
The impact of aviation on the UAE's national economic development is both substantial and multifaceted. As an established major global aviation hub, the UAE has leveraged its strategic geographic location through significant investments in aviation infrastructure to successfully drive economic growth, promote diversification and improve the country's international connectivity.

Look at Numbers

In 1995, the aviation industry constituted less than 5% of the UAE's GDP, whereas it now comprises more than 13%.²² The aviation industry's contribution just to Dubai's GDP, was estimated at an impressive 27% prior to the onset of the pandemic. Accordingly, air transport in the UAE is critical to facilitating the flow of goods,

investments, and people. A look into the numbers reveals that air transportation produced \$28.1 billion in foreign tourist expenditure; \$130 billion in foreign direct investment; and \$384 billion in exports in 2019.²³ Pre-pandemic forecasts estimated that the air transport market in the UAE will contribute \$128 billion and create 1.4 million jobs, with a potential upside estimate as high as \$195.4 billion and 2.2 million jobs by 2037.²⁴

Figure 1: Aviation Sector’s Contribution to UAE Economy



Source: IATA (2019) based on data from Oxford Economics (2018)²⁵

Figure 2: Forecast Scenarios and GDP Footprint

		PASSENGERS	US \$ GDP	JOBS
2017		59.5 m	\$47.4 bn	0.78 m
	Current Trends	160.5 m	\$127.7 bn	1.4 m
	Upside	245.7 m	\$195.4 bn	2.2 m
	Downside	128.2 m	\$102 bn	1.1 m

Source: IATA, 2019

In 2023, the global aviation industry returned to profitability after having incurred losses of \$140 billion in 2020 and air travel came very close to matching its pre-pandemic pace of activity.²⁶ The recovery is not only a testament to the industry’s resilience and its adaptability but also to the burgeoning role of diplomatic activity within the global aviation industry as the world moves forward.

Supporting Human Capital

The impact of the aviation industry on national development however extends far beyond raw economic figures. It is evident that aviation is vital to economic growth and to economic diversification in the UAE since it directly and indirectly supports trade as well as the advancement of related sectors like tourism and hospitality. However, the aviation industry also contributes to national development through its ability to foster the development of human capital. This possibility has emerged due to investments in world-renowned institutions and academies such as the Emirates Flight Training Academy and Etihad Aviation Training.

It is further advanced through initiatives and partnerships such as the agreement between the Khalifa University of Science and Technology and Boeing to focus on curriculum enrichment with the explicit goal of strengthening the UAE's human capital in aerospace engineering.²⁷ Investments, institutions and international partnerships in the aviation industry indirectly advance a competitive workforce, facilitate the capacity-building measures required to meet the evolving demands of the UAE aviation industry, and cultivate a diverse, sustainable and skills-driven knowledge-based economy.

Infrastructure Development, Innovation and Sustainability

The aviation industry has played a pivotal role in the UAE's infrastructure development. Advancements in the aerospace sector have helped to facilitate the transformation of Dubai and Abu Dhabi into global hubs for air travel, business and international tourism. The Asia-Pacific market alone accounts for nearly 13 million passengers annually (Figure 3), in line with the UAE's diplomatic pivot to the East. The massive flow of passengers has been supported by infrastructure development and policies to enhance the international connectivity of the UAE to all major markets (Figure 4).

Figure 3: Annual Passenger Flows by Region (origin-destination, in thousands)

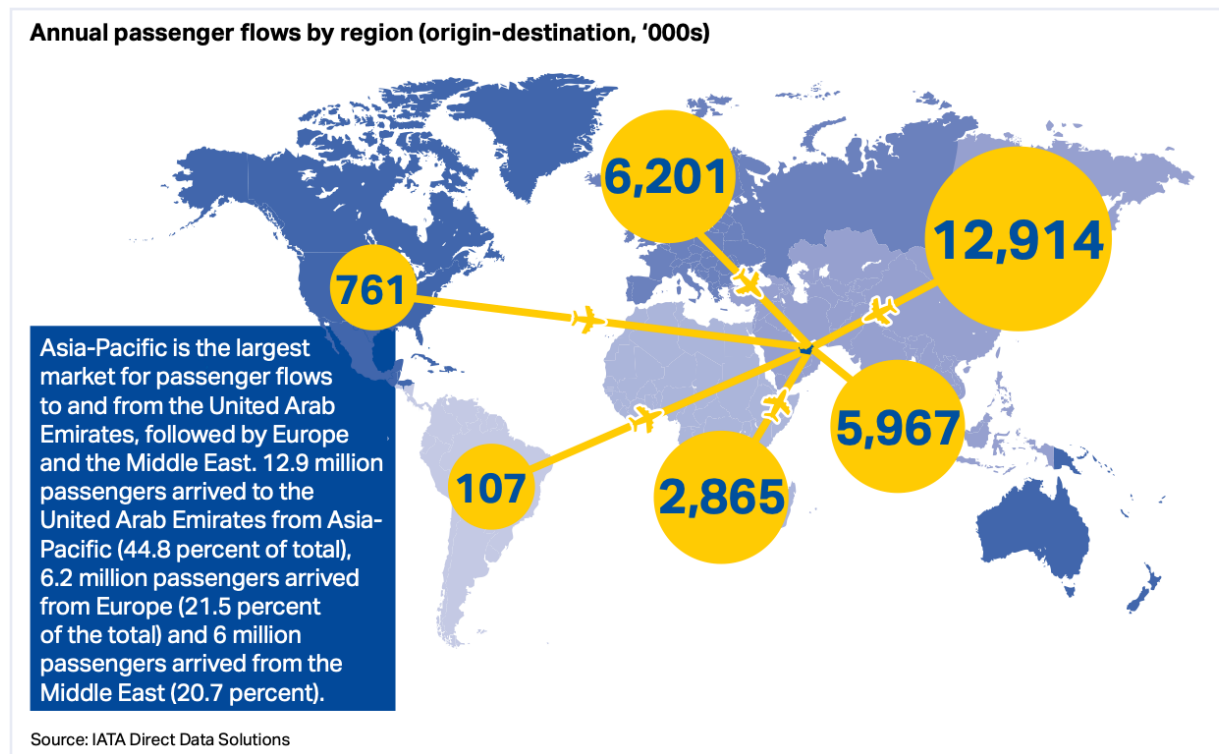
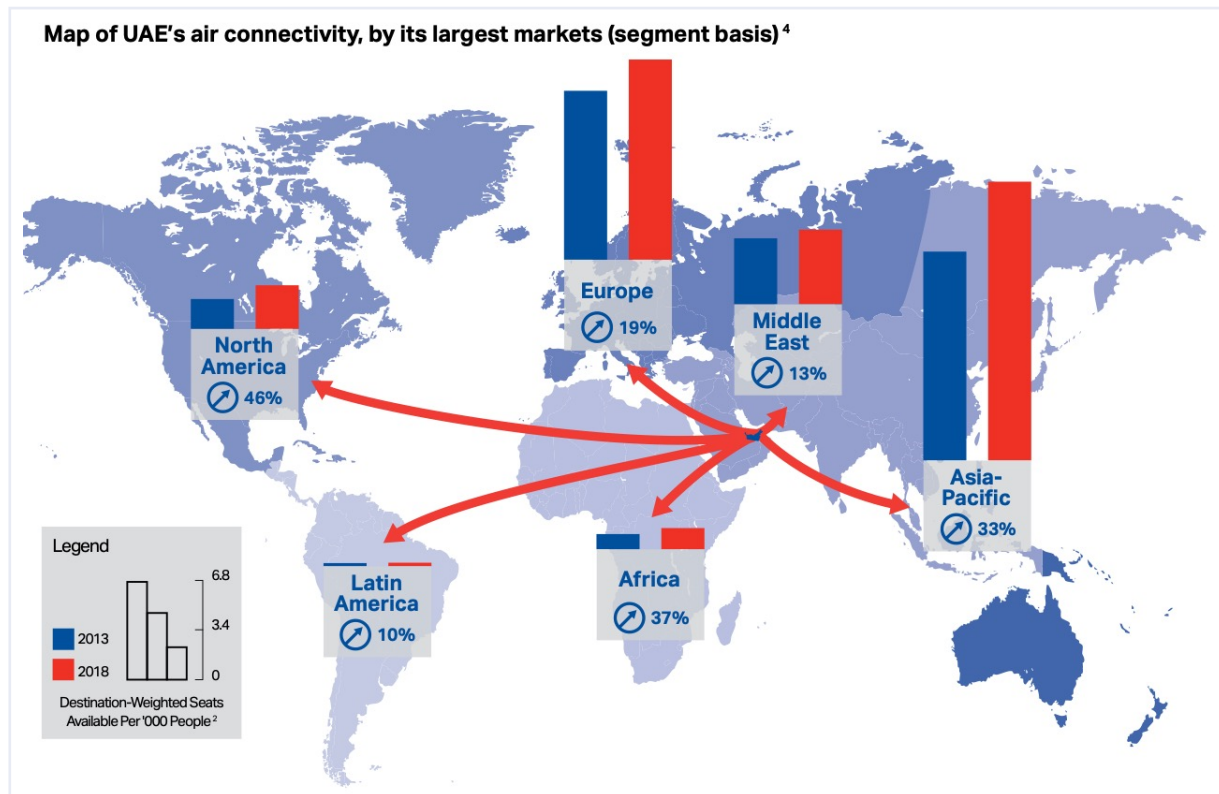


Figure 4: UAE Air Connectivity by Largest Markets



Source: IATA (2019)

These strategic policies included opening the economy to international businesses and investors and implementing Open Skies agreements that promote travel and trade while minimizing government interference. In addition, government investment in the aviation sector has been accompanied by billions of dollars spent on new attractions in Dubai and Abu Dhabi, easing visa rules and restrictions, and enacting policies to attract and recruit highly skilled talent.

Advancements within the aviation industry have been accompanied by continuous government efforts to expand airport and airspace infrastructure to alleviate congestion and modernize services.²⁸ Dubai International Airport (DXB) is actively in the process of undergoing a \$3 billion expansion that will see the site transformed into a smart airport with the capacity to accommodate more than 120 million passengers by 2026. This capacity alone will contribute more than 10% to the anticipated ability of Middle East airports to collectively handle 1.1 billion passengers by 2040.²⁹

Following the expansion, efforts are expected to shift to Dubai's second hub in Al Maktoum International Airport (DWC), where the ambitious aim is to divert passengers, reduce congestion, and accommodate as many as 240 million passengers annually by 2050.³⁰ Meanwhile, Zayed International Airport in Abu Dhabi opened Terminal A in late 2023, enabling the airport to serve 45 million passengers annually from 117 global destinations. In addition, the X-shape design of Terminal A provides improved operational efficiency and passenger flow reducing curb-to-gate times down to 12 minutes.³¹

Such extensive infrastructure efforts have enabled the UAE aviation industry to operate a massive network that connects 240 destinations³² and to immerse itself more deeply within the aerospace supply chain as a producer rather than consumer. In the past decade and a half, the Mubadala Investment Company has established Strata – the Arabian Gulf's first producer of composite aircraft parts.³³ Strata, which aims to advance the development of a leading aerospace hub in Abu Dhabi, maintains active partnerships with leading manufacturers including Airbus and Boeing.

Meanwhile, Emirates and Etihad, the two national flag carriers, have endeavoured to sign multiple partnerships and collaboration agreements with leading manufacturers, suppliers, and stakeholders within the global aviation industry to reduce CO2 emissions and promote de-carbonisation.³⁴ The latter has innovatively entered into a joint project development agreement with Tadweer – the Abu Dhabi waste management company. The objectives of

the partnership are to create the first waste-to-sustainable aviation fuel plant in the Middle East and to meet the UAE's targets of diverting 75% of waste from landfills by 2025 as part of its compliance efforts with CORSIA.³⁵ The mission of the plant is to successfully convert four million tons of municipal solid waste into sustainable aviation fuel thereby enabling the UAE to reduce CO2 emissions by 1 million tons per year.

Efforts to support sustainability are also reflected in the 2023 sustainability fund created by Emirates Airlines. With \$200 million endowment, the fund marks the single biggest commitment to sustainability by any airline in the world.³⁶ It supports research and development projects focused on mitigating the impact of fossil fuels in commercial aviation through the identification and pursuit of innovative partnerships with leading organisations that are working on solutions in advanced fuel and energy technologies.³⁷ Advancements within the aviation industry have served to directly and indirectly support the national development and diversification of the UAE.

Foreign Relations and Soft Power

The growth of the aviation industry has paid dividends in enhancing the UAE's international profile and thereby its national development. The expansion of air connectivity to and from the UAE has not only facilitated diplomacy, global business and tourism but has equally served as a soft power, providing the UAE with a valuable platform to project the country's image as a modern, dynamic and multicultural destination. Both Emirates Airlines and Etihad Airways have served as ambassadors of the UAE through a variety of strategic initiatives that project the country's desire to foster global sports and cultural exchanges.

Emirates Airlines promotes the UAE through a wide range of activities and initiatives that project the cultural, economic and social values of the country on a global scale. First and foremost, the airline is instrumental in promoting tourism to the UAE – and specifically to Dubai through its expansive network of global destinations. The airline, which employs a diverse and multicultural workforce from more than 160 different countries,³⁸ connects more than 150 cities across 80 countries directly to Dubai.³⁹ The level of accessibility created by this network helps to promote tourism and trade and enables the UAE to showcase its culture, heritage, business environment, and modern development.

Emirates Airlines also promotes culture, sports and international engagement. It sponsors the Dubai Jazz Festival and the Emirates Airline Festival of Literature, as well as international institutions like the Sydney Opera House. It also sponsors many global sports teams and events including AC Milan, Arsenal FC, Real Madrid, The Emirates FA Cup, and most recently the National Basketball Association (NBA) Cup in America.⁴⁰ These sponsorships carry the Emirates and by extension, the UAE's national flag across the globe. Additionally, Emirates Airlines is an active leader in corporate social responsibility (CSR) and cultural initiatives. These initiatives range from wildlife conservation with the Dubai Desert Conservation Reserve (DDCR),⁴¹ multiple humanitarian causes aimed at helping the lives of children in need around the world through The Emirates Airline Foundation,⁴² to the promotion of global arts.

Etihad Airways has also engaged in numerous sponsorships and partnerships across a wide range of cultural and sports organisations including Formula 1 Racing, Manchester City Football Club, Special Olympics Abu Dhabi, and Ultimate Fighting Championships.⁴³ These global affiliations are aligned with the strategic objective of promoting the brand of Abu Dhabi globally and growing the business and leisure traffic to the UAE.

Additionally, Etihad Airways is a pioneer in sustainability initiatives, including the 'Greenliner Programme' – a partnership among Etihad, Boeing and General Electric to challenge aviation norms by testing green technologies and creating eco-flights that consume 15% less fuel, follow optimized flight routes, and reduce the number of single-use plastics on board.⁴⁴

Overall, the various activities and initiatives undertaken by the national flag carriers of the UAE play a pivotal role in communicating the UAE's identity and values around the world by blending traditional Emirati hospitality with the country's ambitious, forward-looking spirit.

Becoming a Sustainable Aviation Pioneer

The speed and scale of advancements both in the national development of the UAE and across the global aviation industry are contrasted by the continued need for sustainability awareness. There is, simply put, a global knowledge gap in awareness despite continued growth, expansion and consumption of aviation services. Now more than ever before, policy actions are prominently needed to improve the aviation sector sustainability.

The global aviation industry creates unparalleled connectivity between states through the facilitation of trade, the transference of cargo shipments, delivery of medical shipments and humanitarian aid, and of course, the

transportation of billions of people across the globe via air travel. It can be argued that the global aviation industry is not only an integral driver of international economic and social development but that it is also vital to the overall societal wellbeing.⁴⁵

According to the World Bank, raw figures for international tourism originating in air travel have nearly tripled in the last two decades.⁴⁶ For instance, in 1998, there were a total of 1.5 billion international tourists whereas by 2018 this figure increased to 4.2 billion.⁴⁷ At the same time, the share of international tourists travelling by air increased from 44% to 58%.⁴⁸

The aviation industry is a notable polluter. The International Energy Agency (IEA) has found that prior to the pandemic the annual emissions from aviation constituted nearly one gigaton of CO₂.⁴⁹ The Air Transport Action Group (ATAG) estimates that the global aviation industry produces roughly 2% of all human-induced CO₂ emissions whereas the International Air Transport Association (IATA) estimates it to be between 2–3%.^{50,51} Other studies have independently confirmed that commercial aviation accounts for 2.6% of annual CO₂ emissions from fossil fuel combustion.⁵²

However, it should be noted that none of the above percentages account for the radioactive balance in the atmosphere. Emissions and cloudiness from global aviation operations influence Earth's climate. The impact of these changes is expressed through the metric of radioactive forcing through which it has been estimated that 5% of all radioactive forcing from anthropogenic sources is attributed to global aviation practices.⁵³

More alarmingly, Airbus and Boeing have respectively estimated that aviation activity could grow on an annual average of nearly 5% in the coming decades.⁵⁴ If we couple this with Boeing's statement that the global fleet of aircrafts is set to double by 2040 with the anticipated increases in overall flights and passenger volume, it can be presumed that the climate effects of global aviation will exponentially increase in the absence of innovative interventions.⁵⁵ One study estimates that aviation's contribution to CO₂ emissions could range between 4.6–20.2% by mid-century despite some efficiency improvements in technology and operations.⁵⁶

In 2013, the International Civil Aviation Organisation (ICAO) adopted the goal of carbon neutral growth for global aviation from 2020 onwards. In October 2021, the Air Transport Action Group (ATAG), which consists of IATA, Airports Council International (ACI), the International Business Aviation Council (IBAC), General Aviation Manufacturers Association (GAMA) and Civil Air Navigation Services Organisation (CANSO), and supported by a supply chain that consists of Airbus, Boeing, Rolls Royce, General Electric, and others, issued a declaration to achieve net-zero carbon emissions and global connectivity by 2050.⁵⁷

The ambitious but much needed goal is complemented by a push to accelerate efficiency measures, energy transition and innovation across the aviation sector and in partnership with governments around the world. One potentially positive but complex development in the push towards net-zero carbon emissions is the increased utilisation of alternative fuels to reduce global aviation's carbon footprint. ICAO regards SAF as a key element to reduce aviation emissions alongside increased technological efficiency and operations and the CORSIA. To date, 43 airports currently distribute SAF; 22 SAF policies have been adopted or are under development; there are 21.2 billion litres of SAF under offtake agreements; nine conversion processes have been certified for aviation; and more than 360,000 commercial flights have used SAF.⁵⁸

Although the abovementioned statistics are encouraging, the stark reality is that SAF is in urgent need of accelerated development to meet net zero emission targets.⁵⁹ Indeed, the implementation of sustainable aviation fuels necessitates a manifold increase in coordinated efforts across the global aviation industry, its supply chain, and all relevant stakeholders. The coordination would entail marked improvements in the overall efficiency of operations and the infrastructure of airplanes, airports and air navigation service providers. Accelerated development is equally contingent on research and development that can capably and safely deploy evolutionary and revolutionary airframe and propulsion systems, including the introduction of electric and/or hydrogen powered aircrafts.

An additional challenge also exists in the form of competition between aviation biofuel and road transport biofuel insofar as the former will face implementation hurdles if prices remain comparably high. Most importantly, the strides to achieve net zero carbon emissions and aviation that is green and sustainable is wholly contingent on support from governments, policymakers, stakeholders, and the global energy sector. In a world that is increasingly becoming conscious of its carbon footprint and is expressing it through political will power and climate diplomacy, it is imperative to disentangle neoliberal appetite and growth strategies from the underbelly of the global aviation industry so that a sustainable and greener aviation industry can emerge.

The continued success of the UAE's national strategy to diversify its economy and reduce its reliance on fossil fuels, in line with its Green Agenda – 2030, will be closely linked to its ability to position itself as a leader in sustainability and innovation. Given the importance of aviation to the national economy, the UAE has already taken several actions and initiatives to position itself to be a leader in sustainability, sustainability awareness and innovation. To maximize its potential to pioneer and ensure the longevity of national development, the UAE should be well placed to continue to promote regulatory frameworks that encourage the continued adoption and implementation of sustainable practices within the aviation industry – including carbon offsetting programmes.

Complementary, not Competitive

In navigating this push for sustainability, the UAE boasts of two of the world's leading airlines that should serve to its advantage in its aviation diplomacy plans. The strategies of Emirates and Etihad ought to be viewed as complementary rather than competitive in navigating the future of aviation in the UAE. Both airlines have established themselves as global leaders and both routinely rank in the upper tier of Skytrax consumer-aviation rankings.⁶⁰ In a volatile international market, the aviation footprint of the UAE ought to be understood in the respective paths that the two airlines have strategically carved out – with the former centred on ensuring that Dubai is the world's busiest hub and the latter fostering innovative partnerships to deliver flexible options whilst establishing itself as an industry leader in improving the prospects of sustainable aviation.

In 2019, Emirates constituted the world's largest operator of long-haul flights – following on and off again dispute with its American competitors over adding additional 'fifth freedom flights' which collect passengers at secondary locations prior to arriving in America thereby utilising larger aircrafts and generating more emissions.⁶¹ Fifth Freedom Flights constitute a set of rights outlined in the International Air Services Transit Agreement whereby airlines are granted the right to carry revenue traffic between two foreign countries on a flight originating or ending in one's own country. The dispute between Emirates, and various American carriers centred around claims that Emirates unfairly capitalised on the rights by utilising subsidies to offer lower prices.

Emirates defended its operations by proving subsidies were in line with competition, reiterating full compliance with fifth freedom rights, and arguing that its operations stimulated competition. However, with corporate and passenger traffic subsiding during the pandemic, Emirates had to temporarily scale back its operations, use its crafts for cargo operations and retrofit some of its widebody airplanes by integrating a premium economy cabin to accommodate price-conscious travellers.⁶² Having said that, as the push towards sustainable aviation and the use of SAF increases, Emirates will have to reconsider the viability of jumbo planes and widebodies as part of its future fleet wherein Dubai and Abu Dhabi will continue to serve as leading global travel arteries given their proximity (six hours) to two-thirds of the world's population.⁶³ At the same time, it should be noted that Emirates is one of the select airlines that regularly participates in initiatives that call for SAF deployment.⁶⁴

The financial impact of the pandemic had real implications on the civil aviation industry which was already responding to regional instabilities stemming from the Qatar crisis.⁶⁵ Nevertheless, it was envisioned that World Expo 2020 would bring millions of international tourists and thus temporarily alleviate the strained civil aviation and tourism industries. Indeed, in the years that followed, Dubai International Airport regained its position as the number one hub for international passengers (which was the case for six consecutive years prior to the pandemic) and both the aviation and tourism industries registered a rebound.

Yet, as the aviation industry continues its recovery, it is vital to advance a conceptual understanding of the role of aviation diplomacy in addressing several key challenges that impact the UAE's national development, image projection and reputation management. Unravelling an understanding of these critical challenges within the conceptual framework of aviation diplomacy is also integral to develop deeper insight into the aviation industry's prospects for transforming into a financially resilient and environmentally sustainable sector – especially given that in 2018, the aviation industry in the UAE emitted 21.1 million metric tons of CO₂ making the UAE aviation industry the sixth largest aviation polluter globally.⁶⁶

The UAE should further continue to leverage its diplomatic initiatives to raise awareness through international conferences that provide a platform for global leaders, industry stakeholders and experts to collaborate on reducing the environmental impact of aviation. The country is already demonstrating its leadership in infrastructure development by incorporating sustainability into its operations to reduce energy consumption, improve waste management practices, and increase the use of renewable energy sources.

It can further leverage its political standing and international goodwill by leading the way in the implementation of operational efficiency in aviation through the optimisation of routes, the reduction of fuel consumption, and

the implementation of ground handling practices that minimize carbon emissions. Finally, it must continue to lead the way in investing in sustainable aviation fuels and technologies that can revolutionize the aviation industry and help to make net-zero 2050 a viable reality.

Conclusion

In the contemporary geopolitical landscape, the strategic utilisation of aviation as a tool for diplomacy and national development has gained importance. The UAE, a nation renowned for its visionary approach towards economic diversification and international diplomacy, has undertaken significant initiatives to place itself as a leader in the quest for sustainable aviation practices. This Insight has sought to introduce aviation diplomacy as an emergent, multifaceted concept that transcends traditional diplomatic practices by leveraging civil aviation to influence air transport agreements, regulations, and global economic and political landscapes.

The civil aviation industry has a significant economic impact on the UAE's economy accounting directly and indirectly for 13.3% of the UAE's total GDP. Projections for the next two decades indicate a potential increase to as much as \$128 billion, reflecting the aviation sector's emergence as a cornerstone of the country's economic prosperity. This growth trajectory underscores the strategic importance of the UAE's aviation industry in supporting long-term national development goals and bolstering its position as a global aviation hub.

Furthermore, this Insight highlights the global challenges of sustainable development and environmental sustainability that the aviation industry faces. With the sector responsible for nearly 2-3% of all human induced CO₂ emissions, and projections suggesting a potential doubling of the global fleet of aircraft by 2040, the urgency for innovative solutions to achieve net-zero emissions becomes critically important. The UAE's proactive engagement in aviation diplomacy constitutes a critical strategy to continue to address these challenges, with its flag carriers playing a vital role in projecting national image and aligning national interests with the global sustainability agenda.

As the UAE can, and should, continue to leverage aviation diplomacy for national development, international reputation enhancement and environmental sustainability, the following policy recommendations can further enhance the effectiveness of aviation diplomacy and promote sustainability within the aviation sector:

- Foster stronger international collaborations and public-private partnerships: these should entail not only bilateral and multilateral aviation agreements to solidify economic ties, trade relations and diplomatic engagement, but should also leverage sustainable technology companies from the private sector and public-private partnerships that facilitate the adoption of sustainable aviation technologies.
- Invest in sustainable aviation technologies: resources should continue to be allocated to R&D initiatives for sustainable aviation fuels (SAF) and innovative green technologies to reduce carbon emissions and position the UAE as a pioneer in aviation sustainability.
- Enhance aviation infrastructure: the UAE has undertaken mammoth investment in modernising its airports. It should continue to invest in integrating sustainability measures that adopt energy-efficient systems and green building practices to reduce environmental impact.
- Advocate for regulatory frameworks for environmental sustainability: such as carbon offsetting and reduction schemes.
- Cultivate diplomatic engagement for sustainable aviation: the UAE should utilise diplomatic channels to lead and participate in international discussions and agreements aimed at reducing aviation emissions and promoting global sustainability standards.
- Invest in human capital: the UAE should continue to support the development of aviation professionals through STEM education and training programmes that emphasise sustainability, innovation and the strategic importance of aviation diplomacy.
- Raise sustainability awareness: the UAE would benefit from implementing comprehensive campaigns to raise awareness among stakeholders, including policymakers, the aviation industry and its supply chain, and the public, about the importance of sustainable aviation practices.

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