

Saudi Arabia's Aviation Sector Ambitions and Its Wider Impacts

David Omom, Saudi Aramco, +966 13 873 5801, david.omom@aramco.com

Overview

Saudi Arabia recently announced its National Aviation Strategy which seeks to transform the Kingdom into a global aviation hub, in line with the government's economic diversification plans and ambitious tourism targets. The strategy aims to more than triple annual passenger throughput from 103 million in 2019 to 330 million; increase air cargo throughput from 0.7 million tons in 2019 to 4.5 million tons; and improve the Kingdom's city-to-city direct connectivity from 151 to over 250 – all by 2030.

The underlying goal is to increase employment in the sector from 0.3 to 1.1 million and annual GDP creation from \$21 billion to nearly \$75 billion by 2030. To this end, the government aims to invest around \$97 billion, of which up to \$79 billion is expected to come from the private sector.

Using publicly available data, we have modelled the implications of these targets on airline capacity and throughput; on jet fuel demand and more qualitatively on greenhouse gas (GHG) emissions.

Methodology

The study employs a two-stage analytical framework. First, the forecasts of passenger throughput and passenger-kilometers for domestic, international and transit segments are developed as a function of population and GDP as well as tourism targets and airline strategies. At the second stage, taking travel forecasts as exogenously given, the projections of fuel demand and supply requirements as well as GHG emissions are prepared at a granular level.

Data source/notes: Most of the data/information is obtained from public sources, including from Saudi Arabia's General Authority of Civil Aviation and the Ministry of Transport and Logistic Services. The paper also utilizes Saudi Aramco's internal projections of population and GDP for Saudi Arabia. In the results, domestic (and total) passenger throughput is presented in form of airline format (origin to destination) data rather than the alternative airport format (origin plus destination) count, that is the basis of the target.

Results

Under the National Aviation Strategy, total *unique* passenger throughput grows three-fold from 76 million in 2019 to 251 million by 2030 (or 103 to 330 million in airport format). Domestic passenger throughput increases from 27 million passengers in 2019 to 79 million passengers by 2030 representing almost a third of overall traffic. Over the same period, international traffic grows from 46 million to 143 million passengers while international transit throughput grows almost 10-fold to 30 million passengers.

Fulfilment of these targets offers a generational opportunity to expand Saudi registered carriers. Indeed, the traffic carried by Saudi registered airlines rises nearly four-fold to 165 million by 2030, split between Saudia, Flynas and Flyadeal as well as the two new/proposed PIF-funded airlines (RIA, NEOM).

Underpinned by the anticipated sharp growth in air travel, the total energy footprint (in-Kingdom and elsewhere) is seen to increase from 104 thousand barrels per day (MBD) in 2019 to 288 MBD by 2030.

Fuel consumed by domestic and international flights in Kingdom is estimated at a lower 187 MBD, of which domestic flights account for around 20 MBD.

In line with the energy demand growth, GHG emissions from the aviation sector are projected to increase. The increased international footprint also suggests an increasing need for offsets under the Carbon Offsetting and Reduction Scheme for International Aviation framework developed by the International Civil Aviation Organization and a growing demand for sustainable aviation fuels (SAF) or lower carbon aviation fuels (LCAF).

Conclusions

The recently announced National Aviation Strategy by Saudi Arabia aims to increase the air passenger throughput more than three-fold to 330 million by 2030. If implemented successfully, the strategy will transform the aviation sector into a major source of employment and value creation, with total workforce numbers exceeding 1.0 million by 2030 and \$75 Billion in GDP. The consequent increase in the demand for aviation fuels will however pose considerable decarbonization challenges in the face of an increasingly carbon constrained environment, both domestically and internationally.

References

Ministry of Transport and Logistic Services (2022), Introducing the Saudi Aviation Strategy, Future Aviation Forum, Riyadh, 9-11 May 2022

https://futureaviationforum.storage.googleapis.com/media/documents/SAS_FAF_Brochure_V3.pdf

ICAO Secretariat (2022), ICAO Regional Workshop on CORSIA, Session 6: CORSIA Offsetting Requirements, <https://www.icao.int/>.

GACA (2022) Open Data, Airport Air Traffic Data for 2010-2020. <https://gaca.gov.sa/web/ar-sa/content/translation-of-ar-sa-open-data-library-41148>

Graver, Brandon (2018). Does it Matter to Your Carbon Footprint Whether You Are Flying Across the Atlantic or the Pacific? International Council on Clean Transportation (ICCT) Blog. <https://theicct.org/>

General Authority for Statistics (2020), *55th Statistical Yearbook: 2019*, Chapter 17. Tourism, Entertainment and Sports

GOV.SA (2021), Tourism Strategy in Saudi Arabia, <https://www.my.gov.sa/wps/portal/snp/aboutksa/tourism>

World Tourism Organization (2020). Compendium of Tourism Statistics dataset (Electronic]. Saudi Arabia Basic Indicators Country Report

Saudi Aramco (2022). Population and GDP forecasts.