GLOBAL STRATALOGUES

Advanced Air Mobility in the Gulf

Roundtables at Global Airports Forum

16 December 2025 - Riyadh, Kingdom of Saudi Arabia

GLOBAL AIRPORTS FORUM
Saudi Airports Exhibition

Partners:

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INTRODUCTORY NOTE

This report marks an exciting milestone in the Gulf's Advanced Air Mobility journey—and deliberately so, it's designed as a launchpad for what comes next, not a final destination.

The Global Stratalogues roundtable in Riyadh brought together the right voices at the right time to explore what delivering AAM at national scale truly requires. Our goal was straightforward: build a shared, grounded understanding of the opportunity ahead and identify where focused collaboration will unlock the greatest progress.

Vision 2030 provides extraordinary momentum and strategic clarity. Now we have the opportunity to translate that vision into concrete action, that means getting specific about priorities, sequencing, and smart trade-offs. There are important questions we're ready to tackle together in upcoming discussions: What should Saudi Arabia prioritize first? Which pathways offer the most promising returns? How do we build flexibility into plans when timelines shift, as they inevitably do in pioneering industries?

The operational dimensions are equally energizing. We're looking at questions like: How do we align aircraft delivery schedules with realistic manufacturing capacity? What does a world-class pilot training pipeline look like, and how do we build it? How do we coordinate vertiport infrastructure with national grid upgrades to create seamless integration? And as we scale to 50+ sites, how do we structure financing in ways that attract the right partners and capital?

INTRODUCTORY NOTE

Business model development is where creativity meets opportunity. The exciting conversations ahead will explore: Should Saudi Arabia pioneer a national operator model, or would a multi-operator ecosystem drive more innovation? Who are the natural anchor customers? What ownership and risk-sharing structures make this attractive for both public and private partners? How do we align PIF's strategic objectives with the return expectations of commercial investors? These aren't obstacles—they're design choices that will shape a uniquely Saudi approach to AAM.

Public acceptance represents perhaps our greatest opportunity. Building trust isn't just important—it's the foundation of sustainable growth. Our next discussions will focus on: Who's best positioned to lead community engagement? How do we proactively build confidence? What best practices can we adopt for transparent communication and incident response? Getting this right from the start positions Saudi Arabia as a global model for responsible AAM deployment.

This report, then, sets our agenda for meaningful progress. It highlights areas where deeper collaboration, through focused roundtables and working sessions, will accelerate our path forward. We're identifying the critical conversations that need to happen now, with the right stakeholders, to ensure momentum continues building.

Global Stratalogues is energized to facilitate these discussions. Our commitment is clear: help move AAM in the Gulf from strategic vision to operational reality through collaborative problem-solving, shared learning, and actionable next steps.

The foundation is strong. The opportunity is immense. Let's build on this momentum together.

Oscar Wendel

Founder & Chairman
Global Stratalogues

Executive Summary

The Global Stratalogues Riyadh Advanced Air Mobility (AAM) Roundtable on December 16, 2025, at the Global Airports Forum brought together industry experts, regulators, and investors to critically examine the path forward for next-generation aerial transport in Saudi Arabia. The discussion, moderated by Oscar Wendel and Fawaz AlSaleh under Chatham House rule, yielded a candid assessment of both the potential and challenges of AAM deployment.

Participants collectively agreed that AAM, encompassing electric vertical takeoff and landing vehicles (eVTOLs) and related infrastructure, could transform mobility in the Kingdom, but only with clear regulatory frameworks, strategic infrastructure planning, viable business models, and public acceptance strategies in place.

Key Findings

Key Findings

Saudi Arabia is leveraging proactive engagement with its civil aviation regulator (GACA) to expedite certification for both eVTOL aircraft and vertiport infrastructure. Globally, eVTOLs remain uncertified due to stringent safety requirements (on the order of 1 catastrophic failure per billion flight hours). The roundtable emphasized that adapting and simplifying regulatory pathways for this new industry—without compromising safety—is essential to avoid stifling innovation.

Business Model Realities

The economics of AAM remain challenging. The consensus was that AAM services will not be commercially viable in the early years without support. High upfront capital costs and operating expenses would make ticket prices exorbitant if unsubsidized. Participants noted that government support could come indirectly (e.g., providing land, policy incentives, or infrastructure funding), but direct subsidies or investments would likely require clear public-interest use cases.

Infrastructure and Power Needs

Deploying AAM at scale will require a network of vertiports integrated into urban and regional plans. The vision includes dozens of vertiports by 2030, with one plan targeting 50 vertiports across five regions. However, each site requires significant investment in charging systems, high-voltage power, battery cooling, and passenger amenities, which can easily cost millions of SAR per location. Power infrastructure upgrades (e.g., megawatt-level grid connections) will be necessary, as current grids were not designed for heavy, fast-charging loads.

Market Demand and Use Cases

Rather than a ubiquitous aerial taxi for the masses, the roundtable saw AAM's near-term promise in targeted niches. Premium travel for those willing to pay a high price to save time (e.g., executives, tourists, or VIPs shuttling from airports to business districts or resorts) is expected to drive initial demand. Market studies suggest a "sweet spot" of roughly 30–60-mile trip distances for early eVTOL operations—routes that offer clear time savings over ground travel without exceeding battery range.

Executive Summary

Societal Acceptance and Safety

Public perception was repeatedly highlighted as a make-or-break factor. Community acceptance must be earned through demonstrated safety and proactive engagement. Any early accident or battery incident will likely be amplified by media and could severely set back public trust. To build societal acceptance, the consensus was to start with small steps and transparency: public demonstration flights, stringent safety certification, and educating citizens on AAM technology and safety features.

Innovation, Technology and Talent

Battery technology and vehicle design maturity were pinpointed as critical factors. Today's eVTOLs have limited range and require frequent charging or battery swaps. Autonomy is a game-changer on the horizon, but regulatory hurdles and public acceptance will delay fully autonomous passenger flights. Saudi Arabia's AAM ambitions will also require developing local expertise in aircraft operations, maintenance, airspace management, and advanced manufacturing—particularly to operate safely in desert heat and sand conditions.

Industry Background: AAM Developments in the Gulf Region

Introduction

This report provides a comprehensive background on AAM developments in the Gulf, with a primary focus on Riyadh and Dubai, the two cities at the forefront of implementation. It details the strategic AAM plans for these cities (and their broader national contexts), highlights key projects and partnerships (including the roles of leading eVTOL companies Joby Aviation, Archer Aviation, and Eve Air Mobility), and situates these efforts within wider Gulf and Middle East initiatives.

The Gulf region is rapidly emerging as a global testbed for Advanced Air Mobility, driven by ambitious national visions and investment in next-generation transport. The industry background overview is based on panel discussions at the CoMotion Global 2025 conference in Riyadh where regional leaders and industry pioneers outlined bold plans to integrate electric air taxis and eVTOL aircraft into urban mobility systems.

Saudi Arabia and Riyadh's AAM Vision

National Strategy and Riyadh's Role

Saudi Arabia envisions Advanced Air Mobility as a transformative "third dimension" in its transportation network, aligned with the Kingdom's Vision 2030 goals of modernizing the economy and infrastructure. The General Authority of Civil Aviation (GACA) has launched an AAM roadmap as part of the National Transport and Logistics Strategy, setting aggressive targets for 2030: deploying 200 eVTOL aircraft, establishing 50 vertiports across five regions.

This strategy positions Riyadh, the capital and largest city, as a key AAM hub given its growing population and congestion challenges. Early AAM use cases in Riyadh are expected to focus on premium routes (e.g., airport shuttles or connecting new economic districts) with potential to expand to broader public use as the ecosystem matures.

Regulatory Alignment

A hallmark of Saudi Arabia's AAM push is its partnership with U.S.-based Joby Aviation. In November 2025, GACA signed a memorandum of understanding (MoU) with Joby to streamline certification of Joby's electric air taxi using U.S. FAA standards as the foundation. This effectively aligns Saudi regulations with leading international benchmarks, expediting approval of eVTOL aircraft in the Kingdom. Joby's broader Saudi strategy includes a potential delivery of up to 200 aircraft.

Industry Background: AAM Developments in the Gulf Region

Archer, Cluster 2 and Pilot Deployments

Saudi Arabia is not betting on a single provider. At **CoMotion Riyadh 2025**, officials announced a collaboration with Archer Aviation to launch proof-of-concept AAM operations as early as 2026. Plans include pilot projects in Riyadh, Jeddah, and the NEOM and Red Sea giga-project regions, leveraging diverse sandbox environments to test different use cases. As an airport operator managing multiple regional airports, **Cluster 2 Airports** plays an enabling role in Advanced Air Mobility by aligning airport infrastructure, heliports, and future vertiport development with national AAM roadmaps, ensuring safe, phased, and scalable integration of next-generation air mobility within the Kingdom's aviation ecosystem.

NEOM–Volocopter and Other Initiatives

In addition to Joby and Archer, Saudi Arabia's ecosystem includes a partnership with Volocopter. NEOM formed a joint venture with Volocopter to develop electric air taxi services for the mega-project, including early aircraft orders and demonstration flights. The Red Sea Global project is also embracing AAM with framework agreements to run pre-commercial evaluation flights starting in 2026.

Riyadh City Integration

Planning is underway to integrate vertiports and routes into Riyadh's fabric. Early sites likely include King Khalid International Airport and central districts such as the King Abdullah Financial District (KAFD), with an emphasis on multimodal integration, so AAM functions as a mobility layer rather than an isolated luxury service.

Industry Background: AAM in the Gulf Region

Dubai and UAE AAM Initiatives

01.

Dubai's Air Taxi Program

Dubai has announced its intent to launch flying taxi services by 2026. Dubai's Roads and Transport Authority (RTA) has coordinated agreements among UAE civil aviation regulators, Skyports Infrastructure, and Joby Aviation for initial operations. Dubai has positioned this as a flagship smart-city project, aiming to establish one of the first operational urban AAM networks globally.

02.

Abu Dhabi's AAM Developments

Abu Dhabi is advancing a parallel program, partnering with Archer Aviation and local stakeholders to develop an eVTOL network supported by flight testing, regulatory engagement, and pilot training programs. The UAE's dual-track approach (Dubai with Joby; Abu Dhabi with Archer) increases the probability of early deployment while also requiring robust national airspace coordination.

03.

Partnership with Joby Aviation

Dubai's partnership with Joby is structured to align vehicle readiness, infrastructure delivery, and regulatory approvals for a 2026 launch. The model brings together government transport authorities, a vertiport developer, and an eVTOL manufacturer in a single rollout framework that may become a template for other cities.

04.

Vertiport Network and Operations

Dubai's initial network is planned around four vertiport hubs: Dubai International Airport (DXB), Downtown Dubai, Dubai Marina, and Palm Jumeirah. Vertiports are being designed as integrated nodes with passenger handling, charging infrastructure, and connectivity to existing transport.

Broader Gulf and MENA AAM Initiatives

The AAM momentum extends beyond Saudi Arabia and the UAE. Bahrain has partnered with Eve Air Mobility to develop a regulatory sandbox, vertiport concepts, and workforce initiatives, with a pathway toward commercial services in the late 2020s. Oman has announced proof-of-concept pilots with long-range VTOL systems oriented toward regional connectivity. Qatar and other GCC states are monitoring developments and may align with proven platforms and certification pathways as the market matures.

Industry Background: AAM Developments in the Gulf Region

Key Obstacles to AAM Deployment

Despite the progress, significant challenges remain to deploying AAM at scale.

Regulatory Frameworks and Certification Barriers

Regulatory readiness remains foundational. Gulf regulators are balancing speed with safety, aligning certification approaches with FAA and EASA frameworks while developing national requirements for aircraft, operators, vertiports, pilots, and maintenance.

Public Acceptance and Community Noise Concerns

Community acceptance is a global pressure point. Public misconceptions frequently equate eVTOLs with helicopters. Successful deployments will depend on proactive engagement, transparent safety communication, and credible demonstrations of noise and operational impacts.

Airspace Integration with Existing Systems

Airspace integration requires new traffic management approaches capable of handling low-altitude operations at higher volumes than traditional helicopter activity. This includes defining corridors, integrating with existing ATC systems, adopting digital UTM/UAM tools, and ensuring cyber-security and tracking.

Infrastructure and Vertiport Development

Vertiport planning and delivery are critical dependencies. Challenges include real estate availability, land-use planning, permitting, utility provision, high-voltage charging capacity, and passenger processing.

Economic and Operational Feasibility

Early AAM services will be premium, with uncertain demand elasticity and high operating costs. Long-term viability depends on utilization, cost reduction, and potentially autonomy.

Workforce Development MRO Challenges

Scaling AAM requires pilots, technicians, safety managers, and operational controllers trained for new aircraft and systems. Maintenance in Gulf conditions must address heat, dust, and rotor wear.

Roundtable Discussion: Deep Dive Analysis

Regulatory Pathways and Certification

Establishing a clear and enabling regulatory framework was identified as the foundation for AAM progress. Participants noted that, unlike many countries where regulators are playing catch-up, Saudi Arabia has an opportunity to craft AAM regulations in parallel with industry development.

Global Certification Standards

A consistent theme was that safety cannot be compromised. AAM aircraft must meet stringent safety levels expected of commercial aviation. This drives complex, time-consuming certification involving extensive testing and validation. Saudi stakeholders emphasized early and ongoing engagement with international regulators and manufacturers to align standards, share best practices, and reduce uncertainty.

Adaptive Local Regulations

While global aircraft certification will set the baseline, local adaptations are possible. Saudi Arabia can implement a unified national AAM framework to prevent fragmented deployments. Large master-planned projects provide controlled environments to pilot AAM services under regulatory oversight, serving as sandboxes to validate concepts before scaling.

Certification of Infrastructure

Beyond aircraft, the group discussed certifying ground infrastructure (vertiports) and associated systems. Vertiports require approval for physical design, safety systems, charging, and airspace integration. Saudi Arabia's intent is to align regulators, operators, and developers early so new sites are certifiable in tandem with construction.

Infrastructure and Vertiport Planning

Building physical and digital infrastructure for AAM is a substantial undertaking. The consensus was that infrastructure must lead (or at least keep pace with) vehicle deployment.

Vertiport Network Design

Participants advocated a network approach rather than ad-hoc pads. This requires a national plan that maps vertiport locations, route connectivity, and data sharing standards. Treating vertiports as part of a unified network enables interoperability, efficient fleet routing, and consistent safety protocols.

Physical Infrastructure Requirements

Vertiports require charging or battery-swapping capability, a high-voltage power supply, passenger-handling facilities, maintenance space, and safety systems. In Saudi conditions, external ground power and cooling can reduce vehicle battery drain and improve turnaround reliability. Power supply is a significant constraint: simultaneous charging loads can exceed typical city-center grid capacity, requiring substation upgrades, new feeders, or energy storage integration.

Digital Infrastructure and Airspace Integration

AAM at scale requires a digital backbone: high-resolution mapping, reliable navigation, communications networks, and low-altitude traffic management suitable for high-frequency operations. Integration with conventional aviation and helicopter traffic around airports will require carefully designed corridors, procedures, and surveillance with identification measures.

Roundtable Discussion: Deep Dive Analysis

1

Phasing and Modular Growth

Given high costs and uncertainty, a phased approach is recommended: deploy a small number of strategic vertiports first, capture operational data, and expand modularly based on proven demand, measured safety performance, and community acceptance.

2

Business Models and Financing

The roundtable's economic assessment was frank: traditional market forces alone may not make AAM viable in its early years. Government and strategic investors will play a pivotal role.

3

Early Market Realities

Vehicle procurement, charging infrastructure, pilots, insurance, maintenance, and regulatory compliance create a high-cost base. Early AAM services will likely require either premium pricing, subsidy support, or both.

4

Role of Government and PIF

Saudi support is most defensible when AAM is linked to public value, such as improved connectivity, emergency response, congestion relief, and high-tech industrial development. State-backed entities may act as launch operators or anchor customers to de-risk early deployments, while private sector expertise accelerates execution.

5

Operator and Ownership Models

Possible models include a national operator running fleets and vertiports, a regulated market allowing multiple operators, or PPP structures with government owning certain assets and contracting operations. Partnerships with experienced international operators could bring proven capability, provided regulatory and commercial terms are clear.

6

Pricing and Revenue Strategy

Initial pricing is expected to align with premium services, supported by structured promotional strategies to build awareness without undermining perceived value. Bundled offerings (tourism packages, premium airline transfers) and ancillary revenue (branding, logistics utilization) can improve the overall business case.

Roundtable Discussion: Deep Dive Analysis

Costs, Subsidies, and the Path to Sustainability

Subsidies may take the form of infrastructure funding, land allocation, preferential power tariffs, or viability-gap mechanisms for socially valuable routes. Longer-term sustainability is expected to improve through scale, maintenance optimization, and partial automation—if the technology matures and regulation evolves accordingly.

Market Demand, Use Cases, and Commercial Viability

The roundtable emphasized focusing on realistic, high-value use cases rather than assuming mass adoption.

Premium Urban Mobility

Near-term demand will likely come from time-sensitive travelers and premium tourism. Airport-to-city transfers and high-profile event routes are strong initial candidates in Riyadh and other major hubs.

Tourism, Logistics, and Emergency Services

Tourism experiences and transfers can create early visibility. Logistics operations may provide additional utilization and a pathway toward autonomy. Emergency medical services present high social value but require careful regulatory alignment and operational assurance.

Adoption Rate and Competition with Alternatives

AAM will remain a complement rather than a replacement for ground and rail transport. Door-to-door experience, reliability, and integration with existing mobility options will determine adoption. Success metrics should prioritize safety, reliability, and demonstrated value over headline passenger counts.

Safety and Confidence

Because aviation incidents attract outsized media attention, early operational safety and transparent communication are essential. Public education explaining safety systems, certification rigor, and operational controls can materially increase acceptance.

Workforce and Localization

Saudi Arabia can position AAM as an industrial development opportunity by building local capabilities in MRO, digital airspace management, and manufacturing partnerships. Training programs should blend aviation fundamentals with digital skills (AI, data, cybersecurity) to develop a hybrid workforce suited to the AAM ecosystem.

Roundtable Discussion: Deep Dive Analysis

Societal Acceptance, Safety, and Public Engagement

Safety perception, noise, and trust were identified as the critical public factors.

Noise, Community Impact, and Operating Design

Noise remains a high-risk obstacle. Early route planning should minimize residential exposure and use controlled environments first. Community demonstrations and measured noise data will help set expectations and build trust.

Media Strategy and Influencers

The discussion noted that influencer-led storytelling and credible "first rides" can rapidly shape public perception. This must be paired with responsible, evidence-based messaging and clear contingency handling for delays due to weather or operational constraints.

Battery and Turnaround Constraints

Charging speed, cooling requirements, and energy density limit range and utilization. Vertiport-based thermal management and power design must be engineered for Saudi conditions, including heat and dust.

Autonomy and Operations

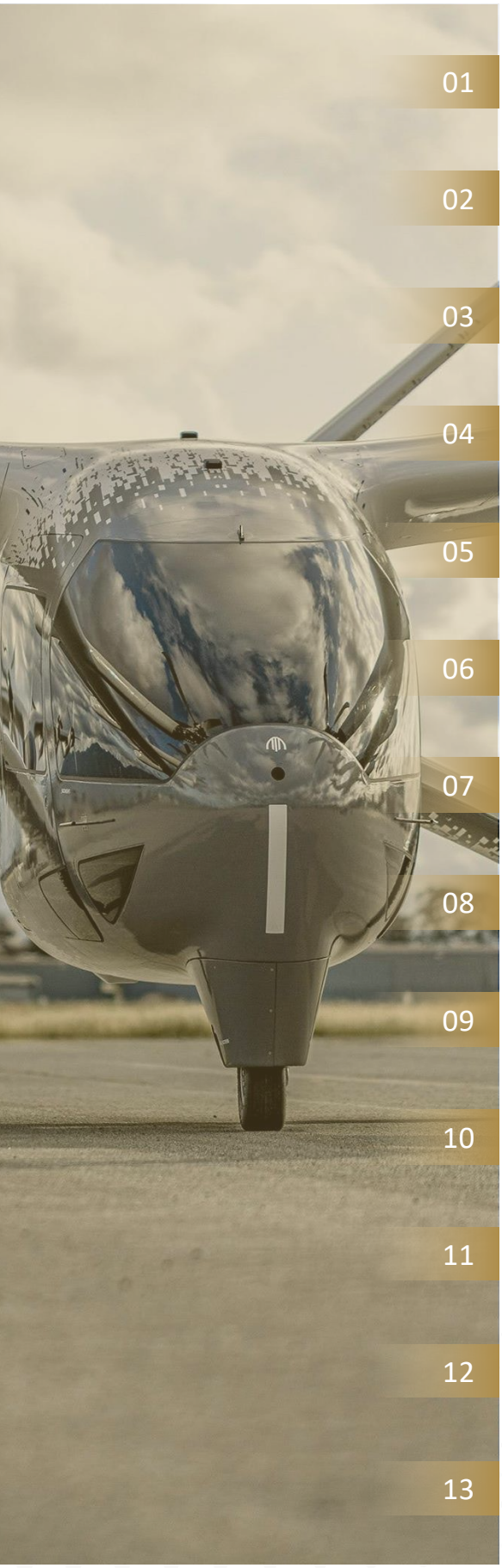
Autonomy may be technically feasible earlier than it is socially and regulatorily acceptable. A pragmatic approach is to advance autonomy in cargo and controlled environments while building trust in passenger services.

Conclusions and Recommendations

Advanced Air Mobility in the Gulf is moving from vision to implementation, led by Saudi Arabia and the UAE. Riyadh and Dubai are advancing structured pathways that combine regulatory alignment, pilot projects, infrastructure planning, and strategic partnerships with leading OEMs. The broader region is also launching initiatives that may contribute to future interoperability and cross-border corridors.

However, success will depend on resolving practical challenges across regulation, community acceptance, airspace integration, infrastructure delivery, economic viability, and workforce readiness. The roundtable's shared conclusion is that AAM in Saudi Arabia is achievable, but it requires coordinated, phased execution across regulators, infrastructure developers, operators, and investors.

Conclusions and Recommendations



01 Establish a dedicated national AAM task force to coordinate regulation, investment, and implementation.

02 Develop a phased implementation plan (pilot routes, pilot vertiports, measured expansion)

03 Use sandbox regions (e.g., giga-projects) to test and validate operations under regulator oversight.

04 Fast-track AAM regulatory frameworks while maintaining airline-level safety outcomes

05 Invest in modular vertiports with future-proofed power and cooling architectur.e

06 Implement noise and community-impact mitigation from day one, with public reporting.

07 Pilot high-impact public-good use cases (e.g., EMS) alongside premium commercial routes

08 Structure early deployments as PPPs to de-risk private investment while ensuring public value

09 Use strategic aircraft orders and partnerships to attract OEM localization and supply-chain capability

10 Build training pipelines for pilots, technicians, and digital airspace specialists.

11 Execute a public engagement and education plan, including demonstrations and transparent safety messaging.

12 Prepare operational contingency plans (weather, rerouting, alternative transport) to protect trust

13 Continuously iterate: collect operational data, publish learnings, and improve standards and technology readiness.

Quantitative Benchmarks and Reference Indicators (Indicative)

Purpose of This Annex

This annex provides order-of-magnitude quantitative benchmarks to support policy, regulatory, and investment decision-making for Advanced Air Mobility (AAM) in Saudi Arabia.

Figures are indicative and intended for scenario planning, not as definitive forecasts. They should be refined through pilot data, OEM disclosures, and regulator-approved trials.

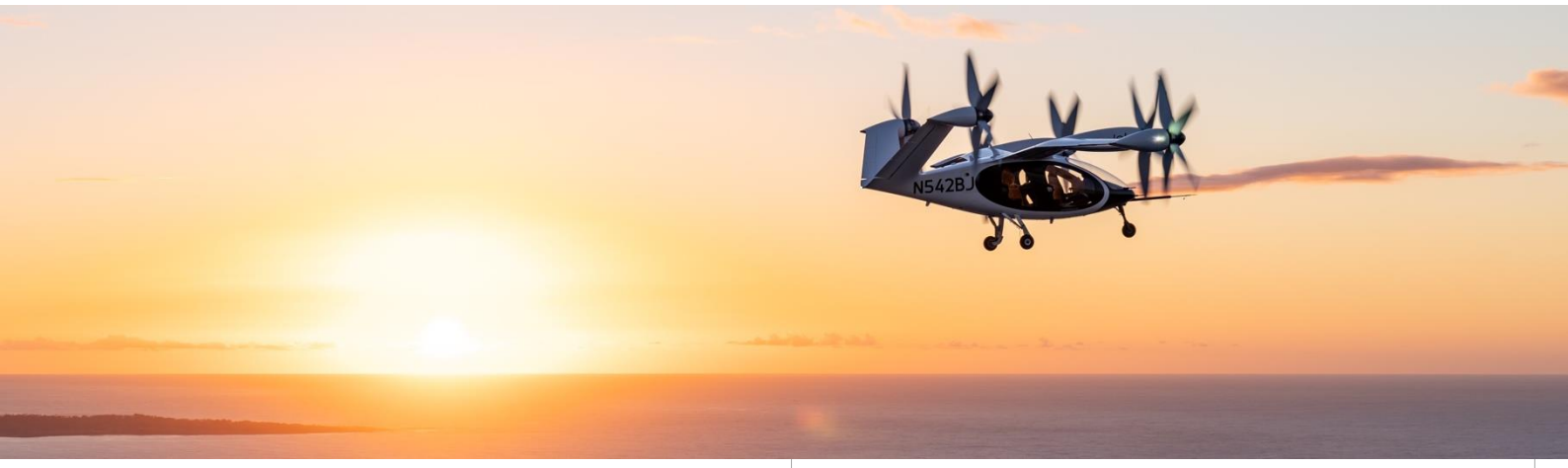
Aircraft Performance Benchmarks (eVTOL Class)

Metric	Typical Early-Generation eVTOL (2025–2028)
Passenger capacity	2–4 passengers + pilot
Range (practical, reserve included)	40–100 km
Cruise speed	200–300 km/h
Energy consumption	~2–3 kWh per passenger-km
Turnaround time	15–30 minutes (fast charge)
Daily utilization (early ops)	4–8 flight hours
Target safety level	≤ 1 catastrophic failure per 10^9 flight hours

Implication for Saudi Arabia:

Early operations favor short, high-value corridors rather than dense urban mesh networks. High ambient temperatures reduce usable range and increase cooling-related energy demand.

Vertiport Cost and Infrastructure



Components of Capital Expenditures	Considerations for Power Requirements
Land preparation & civil works	Peak load for fast-charging stand
Passenger terminal & safety systems	Multi-stand vertiport peak loads
High-voltage grid connection / substation	Grid upgrade requiredment in urban centers
Charging & cooling infrastructure	Saudi-specific factor:
Digital systems (UTM, comms, security)	Cooling systems, dust mitigation, and redundancy increase both capex and opex

Operating Cost Benchmarks (Early Phase)

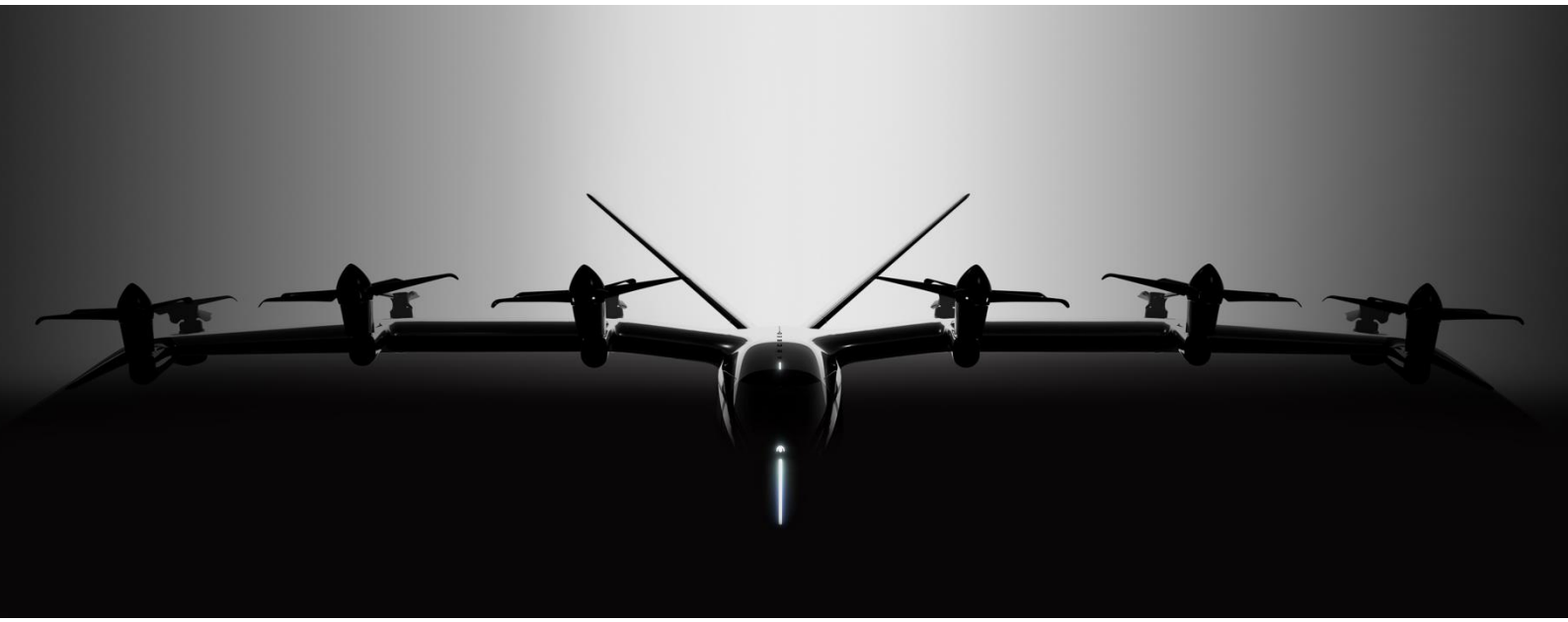
Cost Driver	Share of Total Opex
Pilot & crew	25–35%
Maintenance & MRO	20–30%
Energy & cooling	10–20%
Insurance & compliance	10–15%
Infrastructure access fees	10–15%
Pilot & crew	25–35%

Indicative cost per passenger trip (early phase):

SAR 600–1,500 (depending on distance, utilization, and subsidy support)

This supports the report's conclusion that premium pricing or public support is unavoidable in early deployment phases

Global Deployment Benchmarks (Comparative)



City / Region	Status	Target Launch
Dubai	Vertiports + Joby partnership	2026
Riyadh	Pilot routes + giga-project sandboxes	2026–2028
Abu Dhabi	Archer pilot programs	2026
Paris	Olympic-era demonstrations	Limited
Los Angeles	Regulatory & infrastructure pilots	Late 2020s

Observation

No major city globally has yet demonstrated commercial-scale, unsubsidized AAM operations.

Demand Elasticity and Use-Case Benchmarks

Early Demand Concentration

Use Case	Demand Viability
Airport ↔ CBD / KAFD	High
Premium tourism & resorts	High
Events / VIP mobility	Medium–High
Emergency medical services	High public value
Mass commuter mobility	Low (near-term)

Trip Distance "Sweet Spot"

- 30–60 miles (50–100 km)
- Below this range: insufficient time savings
- Above this range: battery and reserve constraints

Subsidy and PPP Reference Models

Early Demand Concentration

Common Public Support Mechanisms

- Land grants for vertiports
- Grid and power infrastructure funding
- Anchor demand (government travel, EMS)
- Viability-gap funding for socially valuable routes

Indicative Public Support Levels (Early Phase)

- 20–50% of infrastructure capex
- Time-limited (5–10 years)
- Gradual tapering linked to utilization and cost reduction

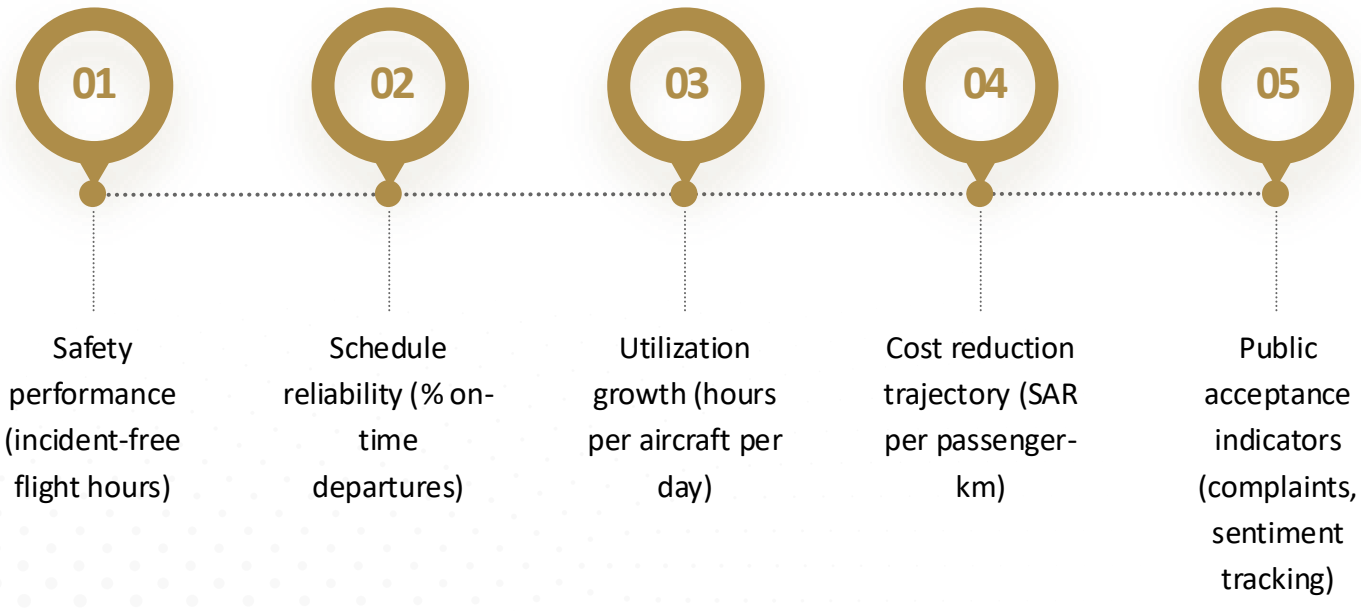
Workforce Localization Benchmarks

Use Case	Demand Viability
eVTOL pilots (licensed)	12–24 months
Maintenance technicians	18–36 months
UTM / digital airspace specialists	12–24 months
Safety & compliance officers	6–12 months

Localization success depends on early integration with aviation academies and technical institutes.

Quantitative Success Metrics (Recommended)

Rather than headline passenger numbers, early success should be measured by:



Annex Summary

Quantitative benchmarking reinforces the report's central conclusion:

AAM in Saudi Arabia is technically achievable and strategically valuable, but economically fragile in its early years.

Phased deployment, PPP structures, sandbox environments, and public-value use cases are not optional—they are preconditions for sustainable scale.

Annex B — Saudi-Specific Deployment Scenarios (Indicative)

B1. Scenario Definitions and Planning Assumptions

These scenarios translate the report's qualitative consensus—premium-first use cases, phased scaling, and infrastructure-leading deployment—into indicative quantitative pathways

Shared assumptions (both scenarios):

- Early operations are pilot-led (autonomy limited to controlled cargo trials)
- Network growth is gated by: (i) certification readiness, (ii) grid capacity, (iii) demonstrated safety, (iv) public acceptance
- Vertiports are built as modular assets with staged power upgrades rather than overbuilt day-one infrastructure
- Government role is primarily enabling + de-risking (land, grid, PPP, anchor demand) rather than indefinite fare subsidy

B2. Scenario 1 — Riyadh-Only Pilot-to-Scale (Capital City Anchor)

Strategic intent: Build a single-city “proof of scale” that becomes the national reference model (regulatory template + operating playbook).

Indicative rollout

- Phase 0 (Pre-ops): regulatory approvals, corridor design, emergency procedures, training pipeline
- Phase 1 (Pilot): 2–4 vertiports; 10–25 aircraft equivalent capacity; priority routes (KKIA ↔ KAFD/CBD, event corridors)
- Phase 2 (Scale within Riyadh): 8–15 vertiports; 50–120 aircraft equivalent capacity; expansion to new districts and high-value nodes
- Phase 3 (Mature operations): 15–25 vertiports; service reliability + utilization optimization; logistics trials to extend utilization

Indicative quantitative ranges (Riyadh-only)

- Vertiports: 4 → 25
- Aircraft equivalent capacity: 10 → 120
- Annual passengers: ~50k → 600k
- Typical trip length: 25–60 km
- Peak vertiport power requirement (per site): 5–15 MW (multi-stand, fast-charge)
- Indicative public de-risking: 20–50% of vertiport + grid enablement capex (PPP / land / grid works)

Advantages

- Fastest path to a credible national reference model
- Concentrates regulator attention, airspace design, and safety governance
- Simplifies public acceptance strategy (single-city narrative, controlled demonstrations)

Risks / constraints

- Demand ceiling risk if the market stays niche
- Congestion of limited corridors if scaling outpaces UTM maturity
- Perception risk: “AAM = luxury” if public-good routes (e.g., EMS) are not visible early

Recommended gating metrics (go/no-go)

- Incident-free flight hours threshold
- On-time performance and turnaround times (heat/dust conditions)
- Grid stability metrics at peak charge windows
- Public sentiment baseline after demonstrations

Multi-Region Rollout (Riyadh + Giga-Project Sandboxes + Major Hubs)

Strategic intent: Use diverse geographies to accelerate learning curves (tourism/resort, desert logistics, urban hub) while positioning AAM as a national industrial and mobility platform—not a single-city service.

Indicative rollout

- Track A (Riyadh Anchor): urban premium mobility + airport transfers
- Track B (Giga-Projects Sandbox): NEOM / Red Sea / AlUla-type environments for controlled scaling, tourism, logistics, and autonomy precursors
- Track C (Secondary Hubs): Jeddah and Dammam/Khobar corridors for intermodal connectivity

Indicative quantitative ranges (multi-region)

- Vertiports: 8 → 50
- Aircraft equivalent capacity: 25 → 200
- Annual passengers: ~150k → 1.5m (consistent with the report's cited 2030 ambition)
- Advanced Air Mobility in Saudi …
- Route portfolio: urban premium + tourism transfers + EMS + limited logistics (to raise utilization)

Advantages

- Faster ecosystem maturity through parallel pilots
- Stronger case for national industrial development (MRO, training, manufacturing partnerships)
- Higher probability of demand formation via tourism and events alongside Riyadh business travel

Risks / constraints

- Higher complexity: national airspace harmonization, standards interoperability, multi-operator governance
- Capex and grid constraints multiply rapidly; risk of stranded assets if certification/vehicle readiness slips
- Public acceptance becomes multi-locality (noise, safety perception, media response)

Recommended governance model

Dedicated national AAM task force recommended in the report with:

- Single certification playbook for vertiports
- Corridor and UTM interoperability standards
- Unified safety reporting and public communication protocols

B4. Scenario Comparison Summary

Dimension	Riyadh-only	Multi-region
Complexity	Lower	Higher
Speed to credible proof	Faster	Moderate
Demand formation	Moderate	Higher potential
Public acceptance management	Easier	Harder
Localization / industrial upside	Moderate	Higher
Capital intensity	Lower	Higher
Risk of stranded vertiports	Lower	Higher

Pragmatic recommendation:

Start Riyadh-only for regulatory + safety credibility, while running 2–3 tightly controlled sandbox pilots (tourism + logistics + EMS) to accelerate learning without triggering uncontrolled capex.

Annex C — Explicit Alignment to Vision 2030 KPIs (Indicative Mapping)

C1. Mobility and Quality-of-Life KPIs

Strategic contribution: reduce perceived travel time, improve urban experience, enhance premium tourism mobility.

AAM-aligned metrics

- Door-to-door travel time reduction on priority corridors (minutes saved vs peak road travel)
- Intermodal connectivity score: % of AAM trips connecting to airports / rail / metro nodes
- Service reliability: on-time departure rate, cancellation rate (weather/ops)
- Customer safety perception: survey-based confidence index post-demonstrations

C2. Tourism and Destination Development KPIs

Strategic contribution: strengthen destination accessibility and create premium experiences without overloading road capacity.

AAM-aligned metrics

1

Tourism-linked ridership:

% of AAM trips tied to resorts/events/heritage destinations

2

Visitor spend uplift proxy:

premium package uptake (air transfer bundles)

3

Peak-event mobility performance:

ability to move VIP and high-value visitors reliably during major events

C3. Economic Diversification and Private Sector Enablement KPIs

Strategic contribution: create new aviation-adjacent industries (operations, software, MRO, infrastructure) and crowd in private capital via PPPs.

AAM-aligned metrics

- PPP mobilized capital (SAR): private investment leveraged per SAR of public enablement
- Local supplier participation: % of vertiport and operating spend awarded to Saudi firms
- New SME participation: number of certified service providers (maintenance, charging, digital systems)
- Revenue diversification: non-ticket revenue share (branding, logistics utilization)

C4. Localization, Skills, and Employment KPIs

Strategic contribution: build Saudi capability in MRO, safety, digital airspace, and advanced operations.

AAM-aligned metrics

- Saudi workforce ratio in: pilots (where feasible), technicians, UTM operators, safety/compliance
- Training pipeline throughput: graduates per year by role category
- Certified local MRO capability: number of maintenance approvals and local repair turnaround times
- Advanced skills mix: % workforce with aviation + digital competencies (AI/data/cyber)

C5. Logistics and National Transport & Logistics Strategy KPIs

Strategic contribution: niche logistics and emergency response capabilities that improve resilience.

AAM-aligned metrics

1

EMS readiness KPI:

time-to-launch and time-to-arrival performance for medical missions (where authorized)

2

Cargo pilot utilization:

payload missions per week; incident-free cargo hours (as autonomy precursor)

3

Network resilience:

contingency performance during road disruptions or peak congestion

C6. Sustainability and Energy Transition KPIs (Pragmatic)

Strategic contribution: demonstrate low-emission mobility where it displaces high-intensity alternatives.

AAM-aligned metrics

- Energy per passenger-km (measured, not assumed) under Saudi heat conditions
- Grid impact management: peak demand smoothing via storage / load management
- Emissions displacement proxy: comparison against helicopter or high-intensity vehicle alternatives on the same corridor

Important caveat: sustainability claims should be corridor-specific and evidence-based to avoid reputational risk.

Acknowledgement & Closing Statement

On behalf of Global Stratalogues, I extend my sincere appreciation to all keynote contributors, roundtable participants, and invited experts whose insight and practical experience shaped the Advanced Air Mobility (AAM) Roundtable in Riyadh. The depth of discussion reflected a shared commitment to moving AAM from concept to implementation, anchored in regulatory readiness, infrastructure integration, and operational realism.

We are particularly grateful to our Saudi partners and stakeholders for their leadership and openness in convening this dialogue in alignment with Vision 2030. Their engagement underscored the Kingdom's ambition to position Riyadh as a global reference point for next-generation mobility, where innovation, safety, and public value advance in parallel. A special thanks goes out to Fawaz AlSaleh (Aeronautica), Amal Al-Ruwaii (NeoSpace Group), Nabil Arnous (Innovation City), Husam Alzahrani (Cluster 2) and Daniyal Qureshi (Global Airports Forum).

This roundtable represents the foundation of an ongoing Global Stratalogues AAM dialogue series across priority markets, focusing on certification pathways, airspace management, vertiport development, public–private coordination, and scalable deployment models. We thank all participants and partners for their continued collaboration in shaping a credible, investable, and future-ready AAM ecosystem for the Kingdom and beyond.

Oscar Wendel
Founder and Chairman
Global Stratalogues

UK Parliament – House of Lords

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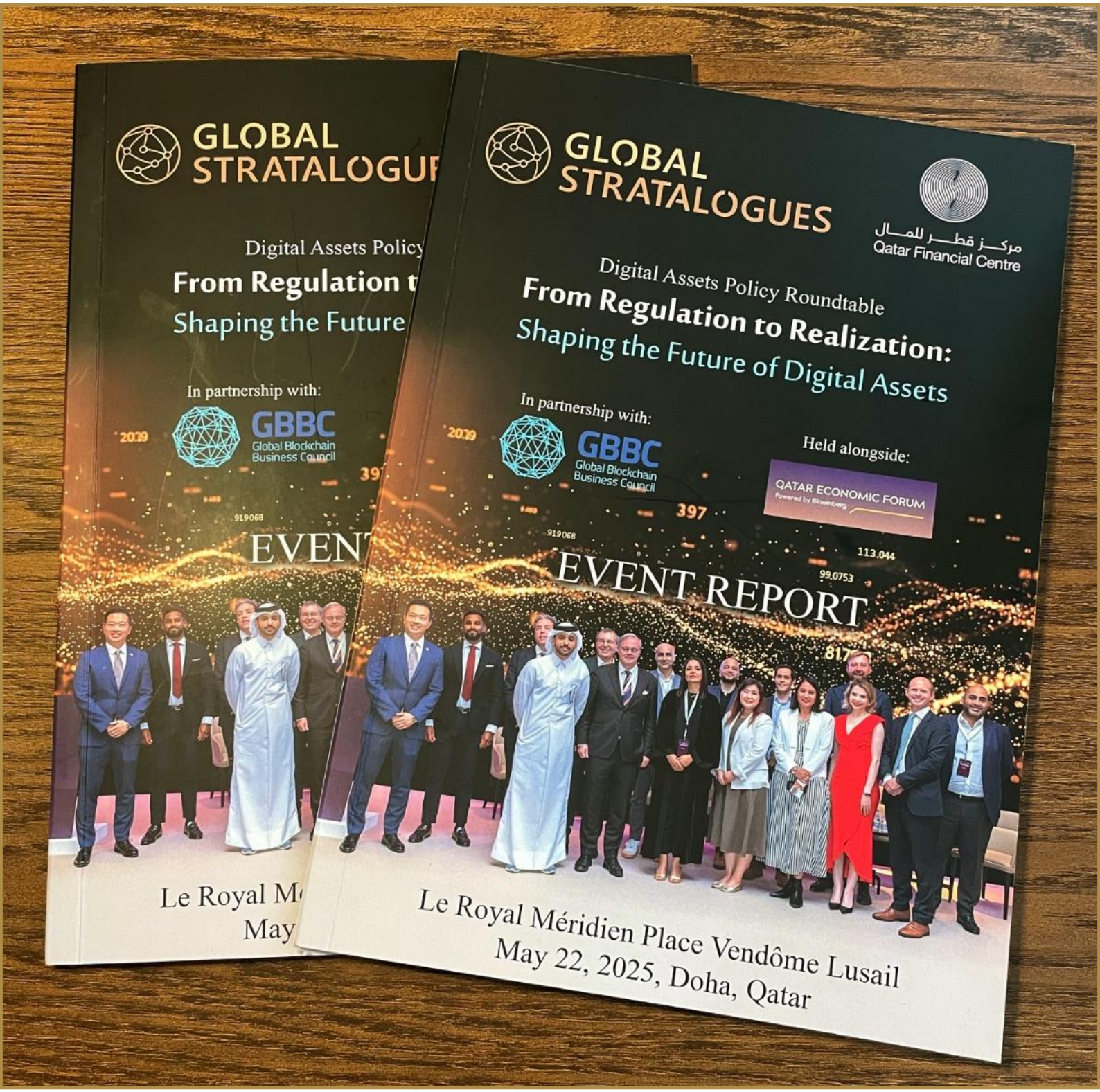

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