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How Can Gulf Energy Hubs Become Global Leaders in Building Sustainable Aviation Fuel Corridors?

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FROM WASTE TO WINGS: How Gulf Energy Hubs Can Lead the World in Building Sustainable Aviation Fuel Corridors

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A New Flight Path for Gulf Leadership

The Gulf’s traditional energy story is built on powering global movement — from crude oil to jet fuel. Today, that story is entering a transformative new chapter. As aviation faces mounting pressure to decarbonize, sustainable aviation fuel (SAF) has emerged as the single most viable route to achieve net-zero flight by 2050.

While Europe and the U.S. wrestle with regulatory complexity, high energy costs, and limited feedstock, the Gulf enjoys the structural advantages needed to lead the next aviation revolution. Its geography connects Asia’s feedstock basins with Europe’s markets; its ports and refineries already anchor global midstream networks; and its governments possess the agility to align policy, capital, and infrastructure around a shared national vision.

To succeed, Gulf energy hubs must adopt an integrated strategy that unites government regulation, private innovation, and existing midstream infrastructure. This is not about competing with hydrocarbons — it is about complementing them. It is about turning waste into wealth, policy into opportunity, and transforming Fujairah into the beating heart of a new generation of global SAF corridors.

Building the Foundations of a Regional SAF Ecosystem

The foundation of leadership begins with clarity and commitment. Gulf governments should codify national SAF roadmaps with measurable blending and production targets. The UAE’s 1% goal by 2031 is a meaningful start — but success will require incremental expansion toward 10% or more by 2040. Predictable frameworks and long-term incentives are the oxygen investors need to commit capital.

Feedstock availability remains the single greatest challenge. Municipalities can turn that constraint into an opportunity by creating mandatory used-cooking-oil (UCO) collection systems, converting restaurant waste into refinery feedstock. With traceability platforms and pricing mechanisms, UCO can shift from environmental burden to

industrial commodity. But this requires harmonized regional regulations: laws that currently classify UCO as “waste” and restrict cross-border trade must be modernized to enable Gulf-wide circulation of certified materials.

Refiners, in turn, should invest in flexible hydroprocessing technologies capable of adjusting output between SAF and renewable diesel depending on demand cycles. This adaptability will help hedge against volatility in jet and diesel markets and maintain operational profitability year-round. The Gulf’s proximity to Africa, South Asia, and Southeast Asia further strengthens its hand, offering short-haul access to non-edible oilseeds, animal tallow, and other sustainable feedstocks.

To mobilize this ecosystem, governments could establish state-linked feedstock aggregators that work with municipalities and private collectors to ensure volume, quality control, and traceability. Coupled with transparent SAF price assessments, the Gulf could soon develop its own regional pricing benchmarks, paving the way for liquidity, derivatives trading, and investor confidence.

Creating the Corridors: From Refineries to Runways

True transformation requires connecting production to purpose. The Gulf should build a network of sustainable aviation fuel corridors linking airports, refineries, and storage terminals under a harmonized regulatory umbrella. By aligning infrastructure across Fujairah, Dubai, Abu Dhabi, and Doha, the region can create the world’s first operational SAF corridor, enabling both physical delivery and digital “book-and-claim” trading — where the sustainability value of SAF can be transacted globally, even when the physical fuel is used locally.

Much of the hardware already exists. Fujairah’s extensive tankage, pipelines, and blending facilities can be repurposed for SAF, minimizing capital expenditure and accelerating deployment. These assets, paired with the Gulf’s expertise

in petroleum logistics, can turn existing midstream networks into low-carbon superhighways for aviation fuel.

Fiscal and trade policy reform must reinforce this vision. Eliminating export taxes on biofuels produced in the UAE or Saudi Arabia will make the Gulf more competitive in European markets bound by strict sustainability mandates. At the same time, early off-take agreements with airlines, cargo carriers, and courier firms — sectors that already blend SAF up to 30% in their fleets — will anchor steady demand.

Crucially, Gulf projects should favor modular, scalable design over monolithic mega-plants. Facilities producing 100,000 to 150,000 tons annually can be constructed faster, replicated easily, and expanded as policy frameworks evolve. Proven technologies from established licensors such as Honeywell UOP provide commercial reliability and avoid the R&D pitfalls that derailed several Western ventures. This pragmatic phased approach will allow Gulf producers to scale quickly while managing financial and technical risk.

Hydrogen supply will remain a key input. For early projects, practicality should prevail: tapping existing natural-gas networks to provide hydrogen for hydro-treating ensures economic viability from day one. Over time, as green hydrogen matures, Gulf producers can integrate cleaner alternatives — but perfection must not delay progress.

Fujairah: The Engine Room of a Global SAF Network

All these ambitions converge on Fujairah. Already one of the world’s top bunkering and storage ports, it sits at the intersection of Europe–Asia air corridors and the maritime routes that power them. With its deep-water access, storage scale, and regulatory flexibility, Fujairah is uniquely placed to become the SAF Hub of the South — a one-stop nexus for refining, blending, certification, and global export.

By co-locating SAF refineries with existing tank farms, Fujairah can offer a ready-made logistics ecosystem. Pipelines could link directly to UAE airports and regional carriers, while digital book-and-claim systems would enable airlines worldwide to purchase verified Gulf-produced SAF credits, monetizing sustainability attributes without physical transport constraints. The same infrastructure could also support renewable diesel and bio-bunker distribution, reinforcing Fujairah’s multi-fuel leadership.

“By setting clear targets, building circular feedstock economies, reforming export rules, and anchoring SAF trade in Fujairah, the region can transform from energy exporter to climate-solution provider.”

This transformation must be guided by policy certainty and investor clarity. Clear certification standards, transparent off-take rules, and alignment with global systems such as ICAO’s CORSIA and the EU’s ReFuelEU Aviation directive will ensure Gulf-produced SAF qualifies for international credit schemes. Simultaneously, public-private partnerships in R&D can advance new feedstocks — algae, municipal waste, and non-edible oil crops — securing long-term resource diversity.

Ultimately, Fujairah can serve as both physical and symbolic bridge between the hydrocarbon era and the low-carbon future. Its evolution from oil storage giant to SAF super-hub would embody the region’s wider transition — not away from energy, but toward the transformation of energy itself.

Conclusion: The Gulf’s Moment to Lead

The aviation industry stands at an inflection point. Scaling SAF is no longer a technical challenge — it is a question of coordination, policy, and market design. The Gulf, with its unparalleled infrastructure and strategic foresight, can fill that global gap. By setting clear targets, building circular feedstock economies, reforming export rules, and anchoring SAF trade in Fujairah, the region can transform from energy exporter to climate-solution provider.

In short, the same region that once powered the jet age now has the opportunity to decarbonize it. The path is clear: build the corridors, align the policies, scale the projects, and let the Gulf’s ingenuity carry global aviation toward cleaner skies. ■

TOP 20 GI RECOMMENDATIONS HARVESTED FROM ROUNDTABLE — How Can Gulf Energy Hubs Become Global Leaders in Building Sustainable Aviation Fuel Corridors?

1. Establish Clear National SAF Roadmaps and Targets

Gulf states must codify national SAF strategies with specific blending and production targets, backed by regulatory clarity and incentives. The UAE's current 1% goal by 2031 should evolve into progressive milestones through 2040. Predictable targets attract capital, foster confidence among investors and airlines, and align national ambitions with global net-zero trajectories.

2. Incentivize Used Cooking Oil (UCO) Collection Networks

Governments should formalize UCO collection frameworks through municipal partnerships and enforce recycling laws for restaurants and hotels. Standardized systems for certification, pricing, and traceability can transform waste oil into a valuable industrial input. Efficient collection networks will ensure feedstock security while advancing circular-economy goals and community engagement.

3. Harmonize Regional Feedstock Regulations

Regulatory barriers that restrict waste imports, such as the UAE's current prohibition on importing "used materials," must be revised. Enabling cross-border trade of UCO, tallow, and other waste oils between Gulf states will unlock regional scale, harmonize quality standards, and create a unified, competitive SAF feedstock marketplace across the GCC.

4. Develop Flexible Refinery Technologies

Refiners should deploy modular units capable of switching output ratios between SAF and renewable diesel—e.g., 80:20 or 60:40—based on market demand. This operational agility reduces financial risk, supports seasonal optimization, and allows producers to hedge against price volatility while maintaining continuous plant utilization across evolving aviation and road-fuel markets.

5. Leverage Gulf Proximity to Global Feedstock Sources

The Gulf's geography offers strategic access to Asia's and Africa's vast feedstock basins. Importing non-edible oil seeds, UCO, and animal tallow from neighboring markets through short-haul supply chains minimizes carbon intensity and cost. Building robust trade corridors for sustainable feedstock will underpin the region's long-term SAF competitiveness.

6. Create a "Gulf SAF Corridor" Strategy

Establish a network of SAF corridors linking airports, refineries, and storage terminals through shared infrastructure and harmonized regulation. Fujairah, Dubai, Abu Dhabi, and Doha could serve as anchor nodes, enabling seamless production, certification, and distribution of SAF across the Gulf, while connecting to Europe and Asia's aviation hubs.

7. Utilize Existing Midstream Infrastructure

The Gulf's extensive tankage, pipelines, and bunkering systems—especially at ports like Fujairah—can be repurposed for SAF storage and blending. Reusing existing midstream assets reduces CAPEX, shortens project timelines, and reinforces Gulf ports' role as global energy logistics hubs while lowering barriers to early SAF deployment.

8. Reform Fiscal and Export Tax Policies

To attract international investors and expand exports, Gulf governments should remove or reduce export taxes on biofuels. Favorable fiscal treatment for locally produced SAF will encourage new entrants, boost competitiveness with Asian suppliers, and align the region's industrial policy with its ambition to become a global low-carbon fuel hub.

9. Encourage Modular, Scalable Projects

Rather than mega-plants with high execution risk, Gulf refiners should prioritize modular facilities of 100-150 thousand tons per year that can be rapidly replicated. Phased development de-risks investment, allows iterative learning, and fosters regional supply diversification, paving the way for faster capacity expansion once policies mature.

10. Focus on Proven Commercial Technologies

Adopt commercially proven hydroprocessing technologies from trusted licensors like Honeywell UOP, Axens, or Sulzer, instead of expensive proprietary R&D. This "copy-exactly" approach accelerates delivery, reduces technical risk, and ensures operational reliability, enabling Gulf producers to scale SAF quickly and compete with mature producers in Asia and Europe.

11. Build Early Off-Take Agreements

Secure long-term off-take commitments from airlines, cargo operators, and fuel distributors to guarantee market stability. Freight and courier companies—less price-sensitive than passenger airlines—can anchor early demand. These partnerships build confidence for financiers, demonstrate commercial viability, and signal the Gulf's readiness to supply global SAF needs.

12. Enable Government-Backed Feedstock Companies

Establish state-linked entities dedicated to aggregating UCO, tallow, and waste oils from municipal networks and private suppliers. Such agencies can ensure quality control, traceability, and reliable feedstock flow to refineries, while also catalyzing small-business participation in collection and recycling throughout Gulf cities and hospitality sectors.

13. Establish Transparent Pricing Benchmarks

Collaborate with price-reporting agencies like Platts to publish regular SAF price assessments, tracking SAF-to-Jet spreads and SAF-to-HVO correlations. Transparency will facilitate derivatives trading, enable risk management, and create a benchmark reference that supports investment planning and liquidity in emerging SAF markets.

14. Pursue Policy Certainty and Investor Clarity

Investors need predictability in regulations, licensing, and certification to commit capital. Gulf governments should establish clear SAF mandates, certification frameworks, and sustainability verification systems. Transparent long-term policy direction will reduce risk premiums, attract international financing, and anchor the Gulf as a dependable partner in global SAF supply chains.

15. Integrate Hydrogen and Power Solutions Pragmatically

Allow early SAF plants to rely on natural-gas-derived hydrogen and grid power to achieve scale quickly, while planning gradual integration of green hydrogen and renewables later. A phased approach mirrors successful industrial models in Asia, ensuring commercial viability today without stalling progress for perfect sustainability tomorrow.

16. Avoid Over-Engineering Early Projects

Rather than combining SAF production with complex add-ons like carbon capture or full green hydrogen integration at the outset, Gulf developers should adopt a modular, "build-prove-expand" approach. Simplicity enhances bankability, shortens construction cycles, and allows continuous learning before layering advanced decarbonization features later.

17. Coordinate Regional Standards with Global Markets

Work closely with the EU, ICAO, and CORSIA to harmonize Gulf sustainability certification, traceability systems, and lifecycle-emission criteria. Regulatory alignment will guarantee Gulf-produced SAF qualifies for international credit schemes, enabling exports to Europe and Asia while bolstering the region's reputation for compliance and transparency.

18. Encourage Book-and-Claim Market Mechanisms

Support digital "book-and-claim" systems that let airlines purchase the carbon benefit of SAF regardless of physical delivery location. This virtual accounting framework can expand demand, reduce logistical bottlenecks, and channel investment into Gulf production hubs, even when direct pipeline or airport connectivity remains limited.

19. Build Public-Private Partnerships for R&D

Create joint innovation hubs between ministries, universities, and industry to develop next-generation SAF pathways—algae, municipal solid waste, and non-edible oil crops. Coordinated R&D will diversify feedstocks, enhance process efficiency, and future-proof Gulf supply chains against volatility in global waste-oil markets.

20. Position Fujairah as the "SAF Hub of the South"

Fujairah can anchor the region's SAF strategy by integrating refining, storage, and export infrastructure under one governance model. Its strategic location between Europe and Asia, vast storage capacity, and maritime connectivity make it ideal to serve as the Gulf's primary launchpad for global SAF corridors. ■

NB. The Top 20 Recommendations above were harvested from a Roundtable session hosted at the Fujairah Energy Markets Forum on Oct. 2nd, 2025

