Fujairah & Red Sea Bunkering & Refined Products Pocket Guide

Operational Benchmarks, Terminal Logistics, Specification Standards & Crack Spread Arbitrage

1. OPERATIONAL TERMINAL ARCHITECTURE & STORAGE DYNAMICS

As GCC energy routes adjust to bypass maritime chokepoints, bunkering hubs at **Fujairah (Gulf of Oman)** and key **Red Sea Terminals (Yanbu / Jeddah)** play a critical role in stabilizing middle distillate and heavy product flows.

Fujairah Bunkering & Storage Hub

- **Commercial Tankage:** ~10.5M m³ across 12 major independent bulk liquid terminals.
- **Mandous Underground Caverns:** World's largest underground crude storage facility (~42M barrels), providing strategic operational buffer bypassing Hormuz.
- **Bunkering Infrastructure:** Matrix of 18 offshore anchorage berths, Matrix Jetty systems, and direct pipeline connections to VTTI, GPS Chemoil, and Uniper.

Red Sea Terminal Matrix (Yanbu / Jeddah)

- **Yanbu Industrial Port (King Fahd):** Primary downstream export node via East-West Pipeline (Petroline). Storage capacity > 6.5M m³.
- **Refined Product Integration:** Direct integration with YASREF & SAMREF refineries for immediate LSFO and MGO fueling.
- **Jeddah Islamic Port:** Core commercial bunkering hub for container and dry-bulk transit serving north-south Red Sea traffic.

2. MARINE FUEL SPECIFICATIONS & OPERATIONAL SCHEDULING

Adherence to ISO 8217:2017/2024 standards is mandatory. Freight forwarders and charterers must carefully manage viscosity, sulfur limits, and bunkering lead times during high-congestion periods.

Fuel Grade	Max Sulfur (%)	Viscosity @ 50°C	Density @ 15°C	Primary Operational Application
VLSFO (Very Low Sulfur)	0.50% max	180 – 380 cSt	890 – 970 kg/m³	Standard IMO 2020 compliant fuel for international voyages.
HSFO (High Sulfur)	3.50% max	380 – 500 cSt	991 kg/m³ max	EGCS (Scrubber)-equipped vessels; heavily traded in Fujairah.
LSMGO (Low Sulfur Gas Oil)	0.10% max	2.0 – 6.0 cSt	860 kg/m³ max	ECA zones, port operations, and auxiliary generator startups.
ULSD / Jet Fuel	0.001% (10 ppm)	1.5 – 3.0 cSt	820 – 840 kg/m³	Refined clean cargo arbitrage (Clean Petroleum Products - CPP).

Bunker Scheduling Protocol During Port Congestion:
Order placement lead times vary drastically depending on port status. Standard Fujairah lead time is **3 to 5 days**. Under severe anchorage congestion (>40 waiting vessels), lead time extends to **7 to 10 days**. Always mandate a *Bunker Quantity Adjustment Clause (BQAC)* in C/P agreements to mitigate demurrage exposure while waiting at offshore anchorage.

3. CRACK SPREAD DYNAMICS & FORWARDER SURCHARGE IMPACT

Fluctuations in refined product margins (crack spreads) relative to Brent crude directly impact operational transport costs, fuel surcharges, and landside/maritime freight tariffs.

Refined Product Segment	Crack Spread Trend	Impact on Freight & Supply Chain	Mitigation Strategy
Heavy Fuel Oil (HSFO/VLSFO)	Widening VLSFO-HSFO Spread (Hi-5 > $150/MT)	Increases operating cost for non-scrubber vessels. Elevates BAF (Bunker Adjustment Factor) surcharges on liner routes.	Lock long-term VLSFO hedging contracts; prioritize scrubber-fitted vessel chartering.
Middle Distillates (LSMGO / Diesel)	Spike in Gasoil Crack (Red Sea Supply Constraints)	Drives up landside trucking, feeder vessel tariffs, and port handling power costs across GCC trade corridors.	
Jet Fuel / Kerosene	Tightness due to European Export Demand	Pushes clean tanker rates (MR/LR1) higher, squeezing margins for refined product traders.	Utilize swap agreements between Fujairah and Mediterranean delivery points.