Managing Crude Oil Supply in Energy Crisis

Four Strategic levers to Strengthen Resilience and Mitigate Market Volatility

1

DIVERSIFYING CRUDE SUPPLY SOURCE

Source crude from Africa, the US, Latin America, and Australia to reduce reliance on any single region



2

ENHANCING PROCUREMENT FLEXIBILITY

Extend forward purchasing from 2-3 to 3-4 months to secure full long-haul supplies



3

CHALLENGING NEW CRUDE AND CARGO SCHEDULING

Agility in vessel scheduling and readiness to handle new cargoes



4

DRIVING OPERATIONAL EFFICIENCY

Optimize production to respond promptly to market price fluctuations



KEY TAKEAWAY | **DIVERSIFY + AGILITY & FLEXIBILITY + RESILIENCE AMID MARKET FLUCTUATION**

SAF & HVO is the Solution for Low Carbon Transportation Fuel

4 Key Factors Driving Long-Term Project Viability and Competitiveness



1 DEMAND
Market Pull



Growing market
Rising SAF demand supports aviation decarbonization

Policy-driven pull
Mandates and incentives stimulate demand

Airline commitments
Airline offtake adds long-term certainty

2 FEEDSTOCK
Supply Security



Reliable access
Secure volumes at competitive cost

Sustainable inputs
UCO is a key sustainable input

Source diversification
Explore POME, PFAD and CPO where eligible

3 TECHNOLOGY
Efficiency & Scale



Right technology
Align processing routes with feedstock

Yield and costs
Improve yields and lower unit costs (Waste management)

Ongoing innovation
Explore Next-Generation Fuels such as e-Fuels

4 REGULATORY SUPPORT
Enabling Policy



Policy certainty
Clear mandates and stable policy signals

Investment incentives
Tax relief and targeted financial support

Domestic supply chain
Engage cooking oil users to turn waste into value product

Outcomes

Commercial Viability
Competitive long-term returns

Supply Resilience
Reduced exposure to volatility

Lower CO_2 Emissions
Progress toward Net Zero

Wider Economic Value
Energy security and local benefits

How can Refineries Adapt To The EV ERA?

As gasoline demand evolves, refineries must enhance competitiveness and strengthen energy resilience.

1 Refinery Optimization



- **Greater efficiency** *in production and energy use*
- **Competitive costs** *through smarter operations*
- **AI & Digitalization** *for smarter decision-making*

2 Market Expansion



- **Diversify exposure** *by expanding domestic customer networks*
- **Expand exports** *and distribution channels*
- **Capture growth** *across new markets*

3 Product Diversification



- **More value-added** *refinery products*
- **Increasing Next-Generation Fuels** *ratio*
- **More petrochemicals** *and solvents*

LONG-TERM DIRECTION

Move toward higher-value cleaner energy

Key Message

EVs aren't the end of refineries, but an opportunity to evolve.

• Enhance Efficiency • Explore New Markets • Diversify Products