Crude Oil Hedge & Risk Management Plan (Consulting Style)

Report Date: 2026-04-01

Execution Window: 2026-04-01 ~ 2026-04-30

Volume: 200000 tons / 1460000 bbl

Target Coverage: 70%

Primary Benchmark: Brent (ICE)

Market Benchmarks: Brent (ICE), WTI (NYMEX), SC (INE), BU (SHFE)

Disclaimer: This document is for risk-management guidance and is not an investment commitment.

1. Executive Summary and Strategy

The task at hand is to develop a comprehensive crude oil procurement hedge for an importer, specifically targeting 200,000 tons (1,460,000 barrels) with a 70% coverage ratio during the April 2026 pricing window. This strategic initiative is crucial given the volatile nature of the crude oil market and the significant geopolitical risks, particularly surrounding the U.S.-Iran nuclear talks and associated sanctions. The core challenge lies in balancing the need for robust protection against price volatility while maintaining sufficient flexibility to capitalize on potential price declines. To address this, our strategic recommendation involves a multi-benchmark approach, leveraging Brent (ICE), WTI (NYMEX), SC (INE), and BU (SHFE) to diversify risk exposure. Brent serves as the primary benchmark due to its global liquidity and relevance to international trade, while WTI provides insights into North American market dynamics, SC reflects Chinese demand, and BU offers a perspective on Asian refining margins. The total strategy involves hedging 1,022 contracts, with an initial notional value of $145,547,400 and an estimated initial margin requirement of $8,176,000. Governance actions include setting clear execution parameters, closely monitoring margin requirements, and conducting regular stress tests to ensure the hedge remains effective and responsive to market conditions. [1,2,3,4]

2. Geopolitical Risk and Scenario Review

Recent geopolitical developments, particularly the U. (news time anchors: 2026-02-25)S.-Iran nuclear talks and associated sanctions, have significantly impacted crude oil pricing leading up to the April 2026 pricing window. On February 25, 2026, the U.S. issued new sanctions against Iran just before the scheduled nuclear talks in Geneva, heightening tensions and market uncertainty. These events have profound implications for crude oil prices, as they can lead to supply disruptions or increased geopolitical risk premiums. The transmission mechanism of these events is straightforward: heightened risk premiums increase market volatility, which in turn raises margin requirements and impacts the pace of trade execution. In the Base scenario, where supply and demand remain relatively stable, we recommend layering the hedge to maintain flexibility and adapt to changing market conditions. For the Bull scenario, triggered by supply disruptions such as those that could result from escalating tensions, we advise accelerating the locking of futures contracts to protect against price spikes. In the Bear scenario, driven by demand slowdowns, we recommend protecting the downside through options collars or insurance to mitigate potential losses. Each scenario requires a tailored approach to ensure the hedge remains effective and aligned with the client's risk management objectives. [14,15,16,17]

2.1 Geopolitical Risk and Key Market News

- 2026-02-25 | Al Jazeera: US issues new Iran sanctions on eve of nuclear talks in Geneva [14]
- 2026-02-06 | Al Jazeera: US-Iran updates: FM Araghchi says latest round of talks 'a good start' [15]
  Iran says talks in Oman with US officials ended with agreement to continue, but 'discussion in capitals' key.
- date unavailable | Anadolu Agency: Iran seeks 'effective and verifiable' lifting of sanctions in nuclear ... [16]
  Iran seeks 'effective and verifiable' lifting of sanctions in nuclear negotiations with US: Report. Oman-mediated talks resumed between Iran and

2.2 Scenario Analysis and Probability Allocation

Scenario	Probability	Trigger	Action
Base	50%	Baseline supply-demand	Layer hedge
Bull	25%	Supply disruption	Accelerate locking

Scenario	Probability	Trigger	Action
Bear	25%	Demand slowdown	Protect downside

3. Fundamentals and Macro Backing

The current DXY at 130.99 and VIX at 30.61 indicate a strong US dollar and elevated market volatility, which can impact crude oil prices. The EIA inventory report shows a week-over-week change of 6.93%, suggesting a moderate increase in crude oil stocks. These factors can drive procurement cost risk by influencing Brent prices. To mitigate this risk, monitor DXY and VIX closely, and consider executing hedges if DXY rises above 131 or VIX exceeds 31. Additionally, adjust inventory levels based on EIA reports to align with market conditions. [3,4,5,6,7,8]

4. Technical Structure and Key Levels

With the Brent benchmark at 99.69, the absence of term spread data (term structure metric: N/A) limits the ability to execute roll triggers based on term structure. However, the current benchmark price is a key driver of procurement costs. To manage this risk, execute futures locks at the current benchmark price to lock in a portion of the procurement cost. If term spread data becomes available, reassess the roll strategy to optimize the hedge position and minimize basis risk. [1,2]

5. Cross-Market/Spread and Arbitrage

The lack of term spread and basis proxy data (term structure metric: N/A, basis metric: N/A) complicates the management of hedge mismatch across different crude oil benchmarks. However, the current Brent benchmark at 99.69 remains a critical reference point. To manage hedge mismatch, use Brent (ICE) as the primary benchmark and consider cross-hedging with WTI (NYMEX) if basis risk is identified. Monitor the Brent-WTI spread and adjust the hedge ratio if the spread widens or narrows significantly. Additionally, consider using dynamic layering with spread arbitrage to optimize the hedge and capture potential basis opportunities. [1,2,14,15,16,17]

6. Hedge Strategy Matrix

Deploy futures lock, options insurance, and dynamic spread overlay with explicit trigger conditions, funding/margin characteristics, and risk controls. Anchor around 70.0% target coverage with three tools: futures lock, options insurance, and dynamic layering plus spread overlay. [1,2,3,4]

Strategy Matrix

Strategy	Tool	Ratio	Trigger	Cost/Premium	Expected Effect	Risk
Futures Lock	Fixed Price Lock (Futures/Swap)	70%	Breakout or significant geopolitical events (e.g., US-Iran talks)	Margin-driven	Lock in current prices to protect against upward price movements	Potential margin calls if prices move adversely
Collar / Insurance	Zero-Cost Collar / Insurance	42%	Implied Volatility (IV) retracement below 30.61	Premium cost	Provide tail protection against extreme price movements	Liquidity risk during volatile periods

Strategy	Tool	Ratio	Trigger	Cost/Premium	Expected Effect	Risk
Dynamic Layering + Spread	Dynamic Layering + Spread Arb	28%	Significant curve or basis dislocation (e.g., term spread widening)	Higher execution cost	Reduce blended cost through spread arbitrage	Increased execution complexity and potential slippage

7. Phased Execution Plan

Execute pre-event/post-event/late-window phases using staged ratios and TWAP-like layering controls. Pre-event actions will focus on building an initial base hedge, post-event actions will raise the hedge toward the target after event confirmation, and late-window actions will involve rolling and rebalancing using curve and basis checks. During 2026-04-01 to 2026-04-30, execute pre-event, post-event, and late-window stages with layered/TWAP implementation. [14,15,16,17,3,4]

Phased Execution Table

Stage	Target Ratio	Trigger	Action
pre_event	35%	Before key events in the pricing window	Build initial base hedge from coverage-derived target
post_event	70%	Event confirmation within the pricing window	Raise hedge toward target after event confirmation
late_window	59.5%	Final portion of the pricing window	Roll and rebalance using curve and basis checks

8. Execution Details and Risk Controls

Control margin at 8,176,000.00 USD and buffer at 2,452,800.00 USD while rolling before expiry with liquidity checks. Stress tests will be conducted to ensure margin adequacy under various market conditions, and compliance controls will enforce position limits, daily loss limits, volatility alerts, and approval logs. [1,2,14,15,16,17]

{'pre_expiry': {'action': 'Review liquidity and roll gradually ahead of expiry.', 'trigger': '30 days before contract expiry', 'trace': [{'kind': 'evidence_fact', 'statement': 'Liquidity review and gradual roll', 'source_ids': [', ', ', '], 'note': None}]}, 'expiry': {'action': 'Execute roll to the next contract month.', 'trigger': 'On the expiry date', 'trace': [{'kind': 'evidence_fact', 'statement': 'Execute roll to next contract', 'source_ids': [', '], 'note': None}]}, 'post_expiry': {'action': 'Rebalance positions to maintain hedge ratio.', 'trigger': '1 day after expiry', 'trace': [{'kind': 'evidence_fact', 'statement': 'Rebalance positions', 'source_ids': [', '], 'note': None}]}}
{'position_limits': {'action': 'Enforce position limits to not exceed 1,022 contracts.', 'trigger': 'Daily', 'trace': [{'kind': 'evidence_fact', 'statement': 'Position limit enforcement', 'source_ids': [', '], 'note': None}]}, 'daily_loss_limits': {'action': 'Set daily loss limit to 2,452,800.00 USD.', 'trigger': 'Daily', 'trace': [{'kind': 'evidence_fact', 'statement': 'Daily loss limit enforcement', 'source_ids': [', '], 'note': None}]}, 'volatility_alerts': {'action': 'Generate alerts for volatility exceeding 30.61.', 'trigger': 'Intraday', 'trace': [{'kind': 'evidence_fact', 'statement': 'Volatility alert generation', 'source_ids': ['], 'note': None}]}, 'approval_logs': {'action': 'Maintain detailed logs of all trade approvals.', 'trigger': 'Post-trade', 'trace': [{'kind': 'evidence_fact', 'statement': 'Approval log maintenance', 'source_ids': [', '], 'note': None}]}}

Stress Test Table

Shock	Estimated PnL	Margin Change	Control Action
+5.0%	5,094,159.00 USD	817,600.00 USD	Reduce net risk and add liquidity buffer

Shock	Estimated PnL	Margin Change	Control Action
-5.0%	-5,094,159.00 USD	817,600.00 USD	Reduce net risk and add liquidity buffer
+10.0%	10,188,318.00 USD	1,635,200.00 USD	Reduce net risk and add liquidity buffer
-10.0%	-10,188,318.00 USD	1,635,200.00 USD	Reduce net risk and add liquidity buffer

9. Conclusion

Avoid concentrated leveraged single-leg futures; prefer layered futures+options with spread checks. This approach mitigates the risk of significant margin calls and enhances the robustness of the hedge against volatility spikes and geopolitical shocks. Overall recommendation is to run dynamic hybrid hedging through 2026-04-01 to 2026-04-30 around 70.0% target coverage. [1,2,3,4]

Concentrated one-way leveraged futures during volatility expansion. This strategy exposes the portfolio to extreme margin calls and potential liquidation in volatile markets.

Layer futures first, add options for tail risk, and rebalance on spread/basis dislocation. This balanced approach ensures coverage while managing margin and liquidity risks.

10. References

References are numbered by evidence-pack order; in-text superscripts correspond to the bibliography.

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