

X-LNG CASE STUDY · FEB 2026

When LNG Cargoes Become Options

+\$16.8M

route-optimisation uplift at JKM +\$1.50, a 4.2% gain on the fixed schedule

76 cargoes · 5 supply sources JKM swept · parallel curve shifts Monte Carlo · per-path re-optimisation

One book, seventy-six cargoes

— A representative mid-size LNG book with firm obligations and spot access both ways

76

firm cargoes

5

supply sources

3

delivery markets

4

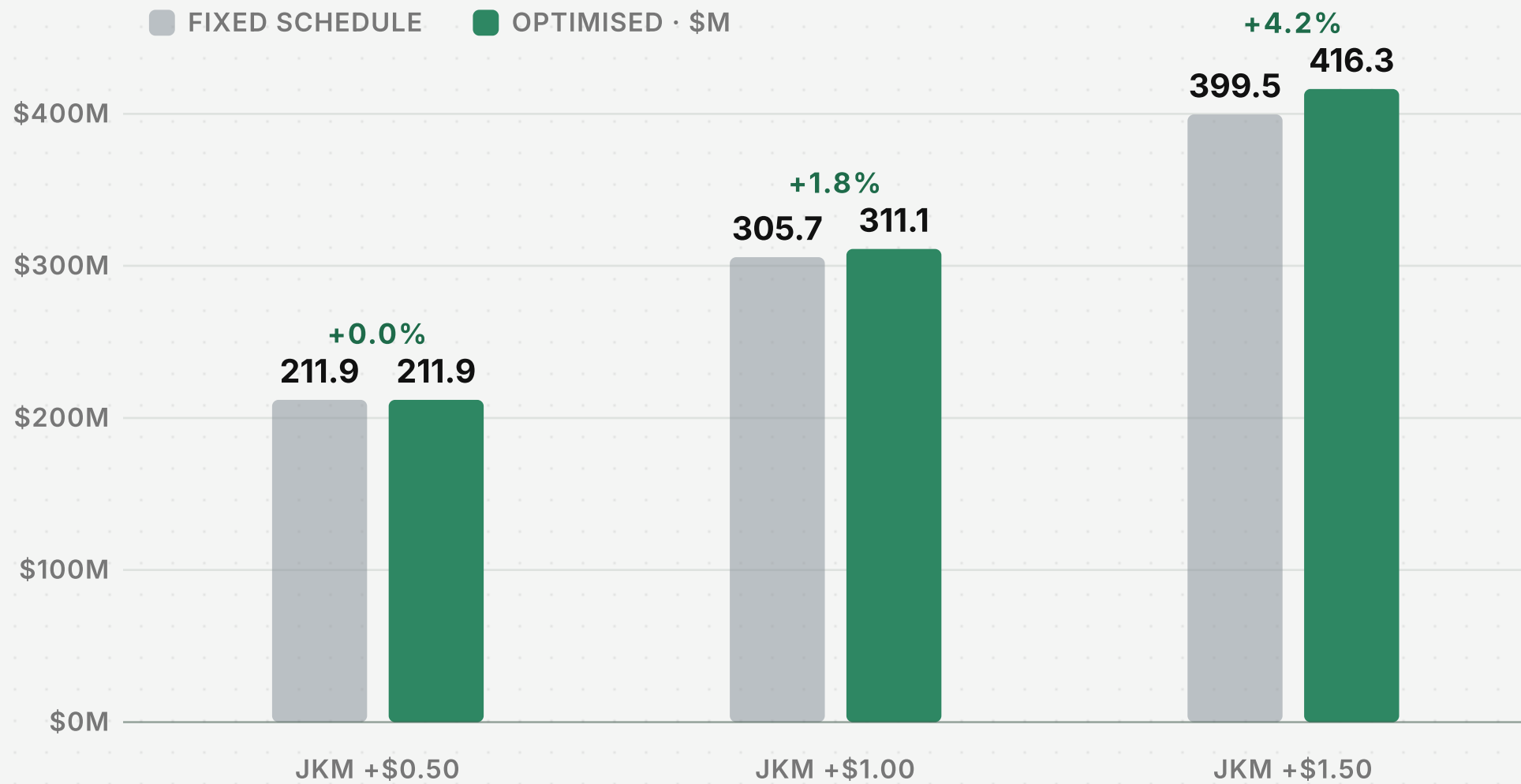
indices: HH, oil, TTF, JKM

FOB length from Sabine Pass, Cove Point and Golden Pass on Henry Hub plus Arzew and Qatargas on oil; DES obligations at Gate, Dahej and Futtsu on TTF, HH and JKM. **Spot access both ways** completes the book.

The question: what is the routing flexibility inside this book worth, and **where does its risk hide?**

Fixed schedule against the optimiser

Portfolio P&L under rising JKM, re-optimised per scenario



EXACT ENGINE RESULTS: \$211.9M / \$211.9M • \$305.7M / \$311.1M • \$399.5M / \$416.3M

The uplift is zero on small moves and compounds as prices deviate: +1.8% at +\$1.00, +4.2% at +\$1.50.

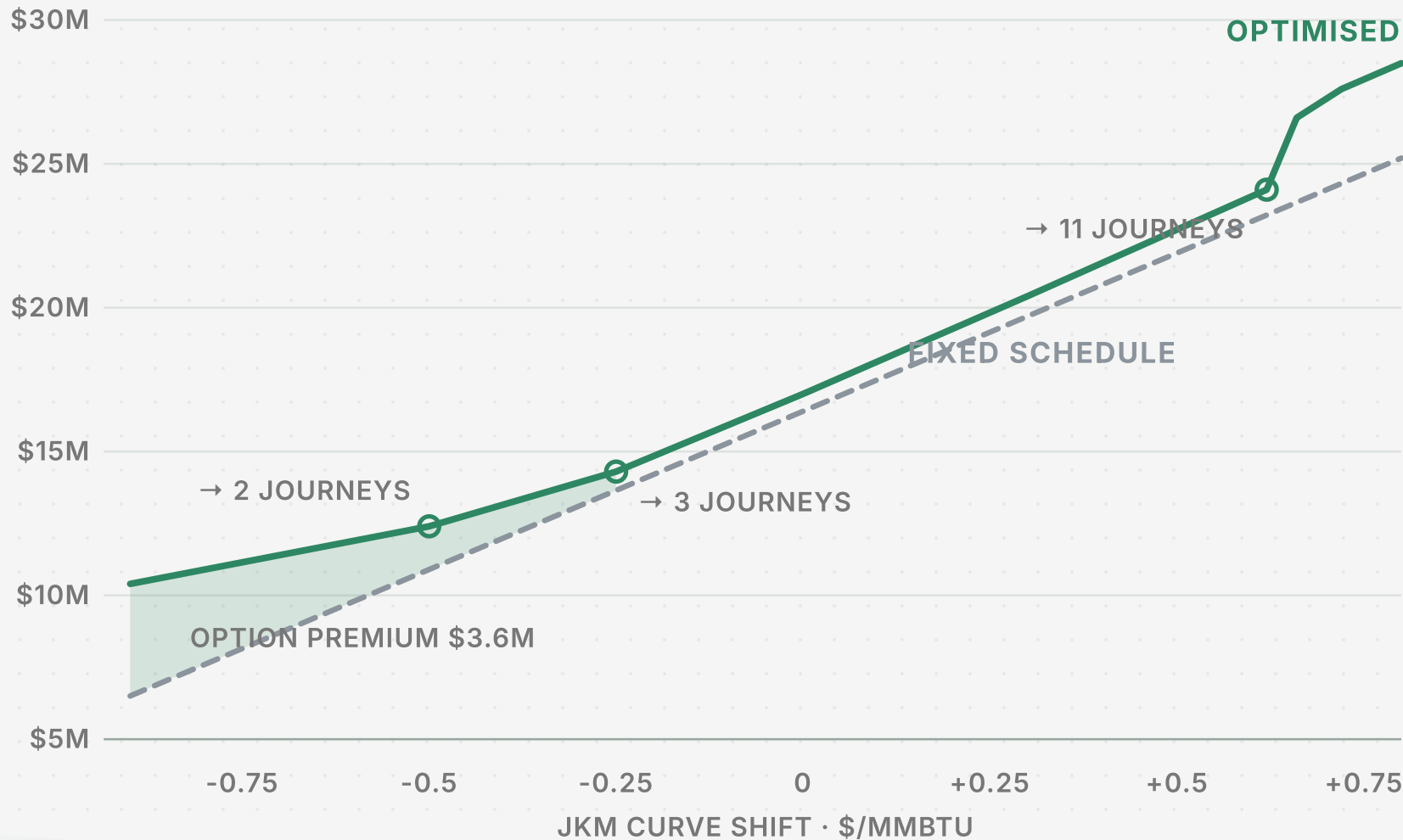
The mechanism

As the JKM-TTF spread widens, cargoes switch to Asia one by one

01

A straight P&L line bends convex

— Deep dive on a stylised four-contract book: eleven flexible cargoes, Gate or Asia

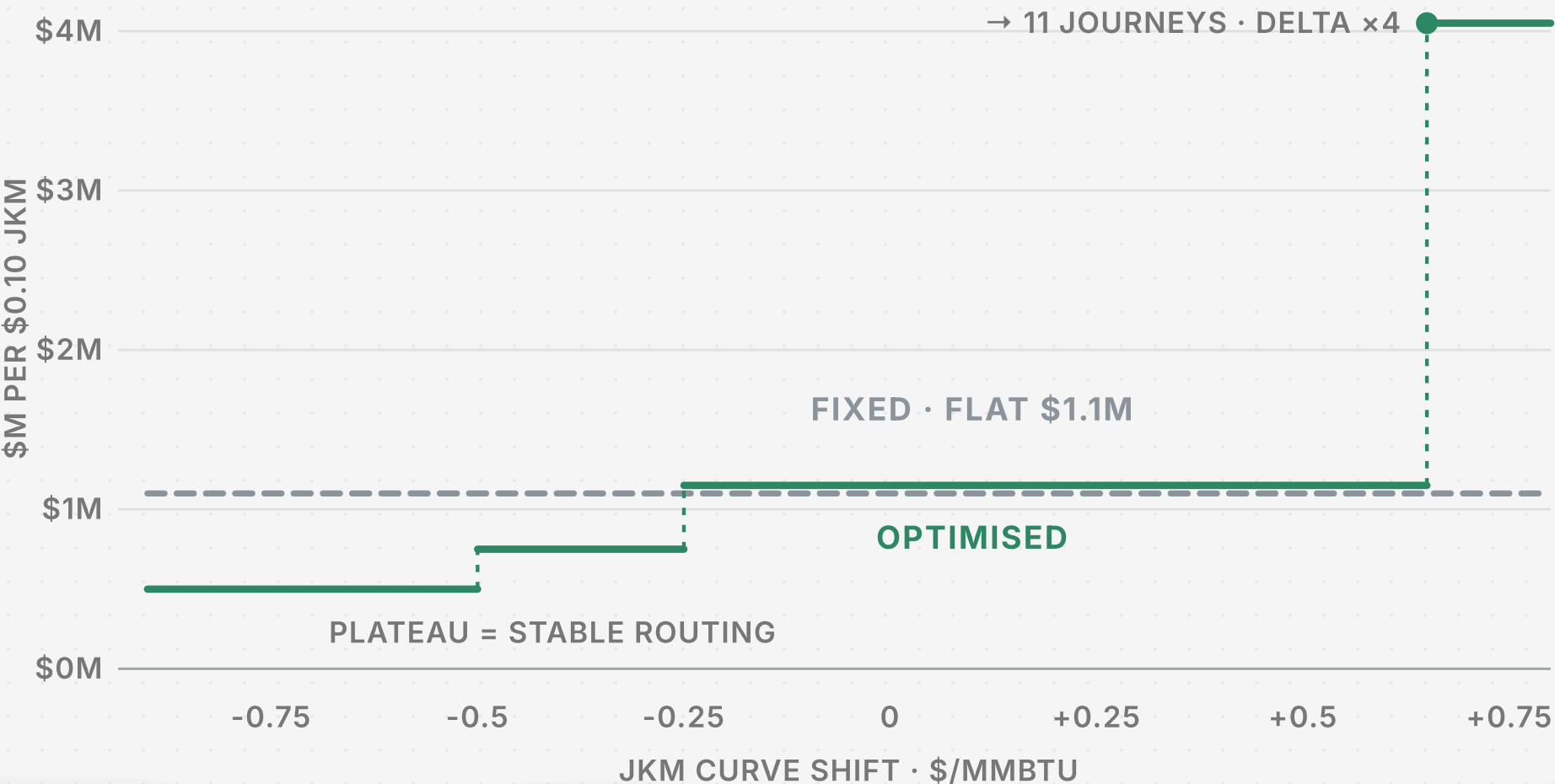


FOB LONG SABINE PASS 11 • DES SHORT GATE 11 • SPOT BOTH WAYS • JKM VARIED AS PARALLEL SHIFTS

Each cargo switches when its JKM netback beats its TTF netback; the gap to the fixed line is the option premium, \$3.6M.

Delta jumps where routes switch

Profit sensitivity per \$0.10 JKM move: plateaus are stable routings, spikes are switches



FIXED CONSTANT AT ~\$1.1M · AT 11 ASIA JOURNEYS OVER \$4M PER \$0.10 MOVE

At the 11-journey threshold delta roughly quadruples. Hedges sized on the old plateau are wrong past the switch.

THE VERDICT

**Fixed schedules have constant sensitivity:
optimised schedules have dynamic sensitivity.**

Every route-switching possibility is a real option. The optimiser prices and exercises them cargo by cargo, so the P&L is convex, the delta is a step function and the optimised schedule never underperforms the fixed one.

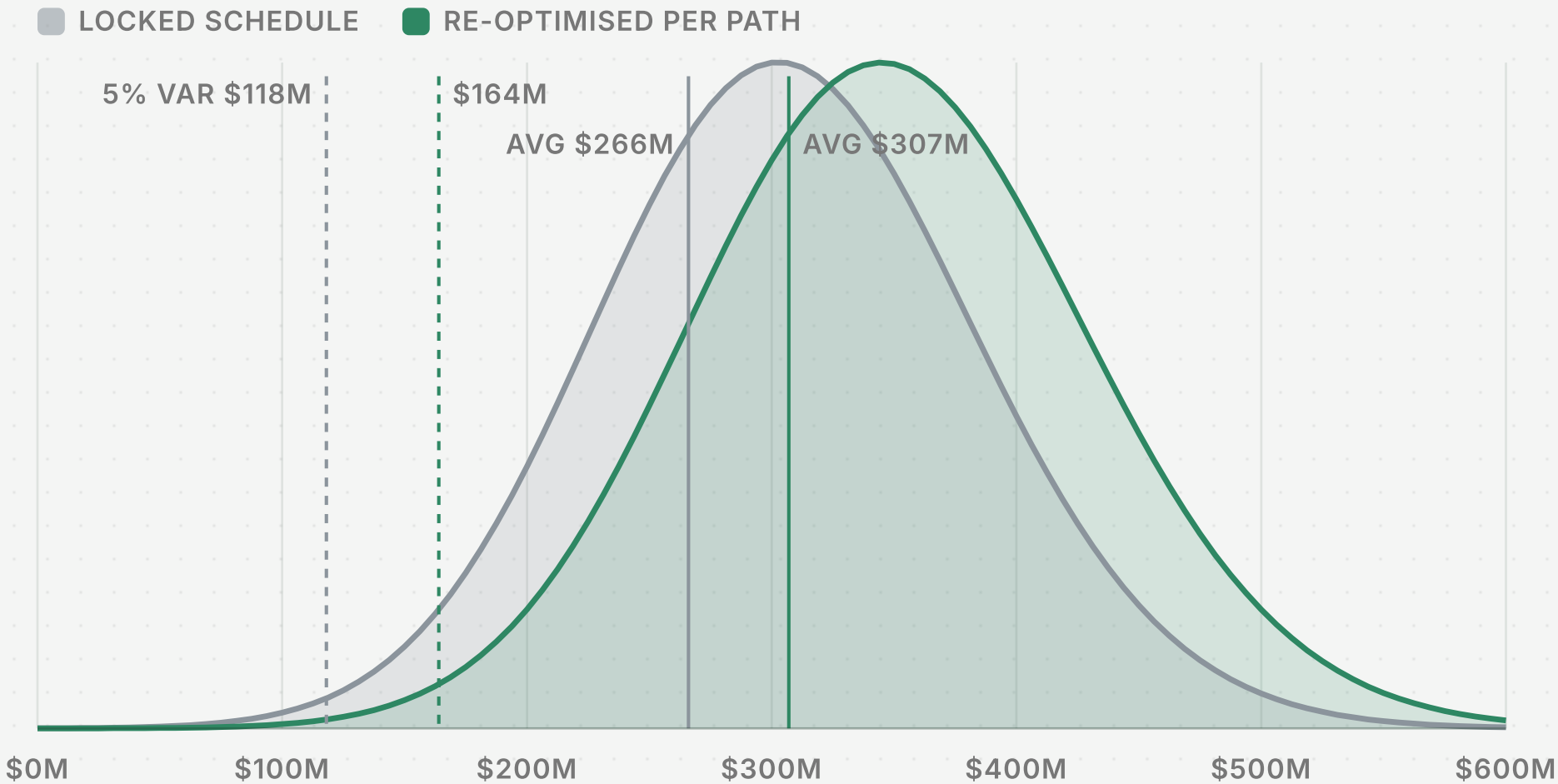
Volatility

The value of optionality under uncertainty, priced by Monte Carlo

02

Flexibility lifts mean and floor

Thousands of price paths; the schedule either locked or re-optimised per path



PORTFOLIO PROFIT · \$M · 120% VOLATILITY

AT 80% VOLATILITY THE UPLIFT PERSISTS: AVERAGE +\$19M (\$270M TO \$288M) • 5% VAR +\$25M (\$173M TO \$198M)

Average profit and the 5% value-at-risk improve simultaneously, in both volatility regimes.

Takeaways

Where the options hide, and where to watch



The uplift compounds as prices deviate

Nothing at JKM +\$0.50, +1.8% at +\$1.00, +4.2% or \$16.8M at +\$1.50; the optimised schedule is never below the fixed one.



Flexibility lifts mean and floor together

+\$41M average profit and +\$46M downside protection at 120% volatility; still +\$19M and +\$25M in the calm regime.



Watch the 11-journey threshold

Where 11 cargoes flip to Asia, delta roughly quadruples to over \$4M per \$0.10 move; hedges must be resized at every switching point.

Modelled with X-LNG

— Whole-portfolio optimisation for LNG books

1

Your world goes in

Contracts, vessels, charter rates, prices, spot assumptions and constraints, the full book, not a slice.

2

One optimal plan comes out

Feasible, P&L-maximising and constraint-compliant, re-solved for every scenario in minutes.

3

Every number checks out

Each result can be recalculated by hand, transparency your risk committee can audit.

See the options hiding in your book

Calypso Ventures GmbH

www.calypso-commodities.com · ms@calypso-commodities.com

+49 157 769 40574

Bismarckstraße 10-12, 10625 Berlin · HRB 239736 B, Amtsgericht Charlottenburg