X-LNG CASE STUDY · AUG 2025

DES-Only Portfolio Optionalities

$2.06

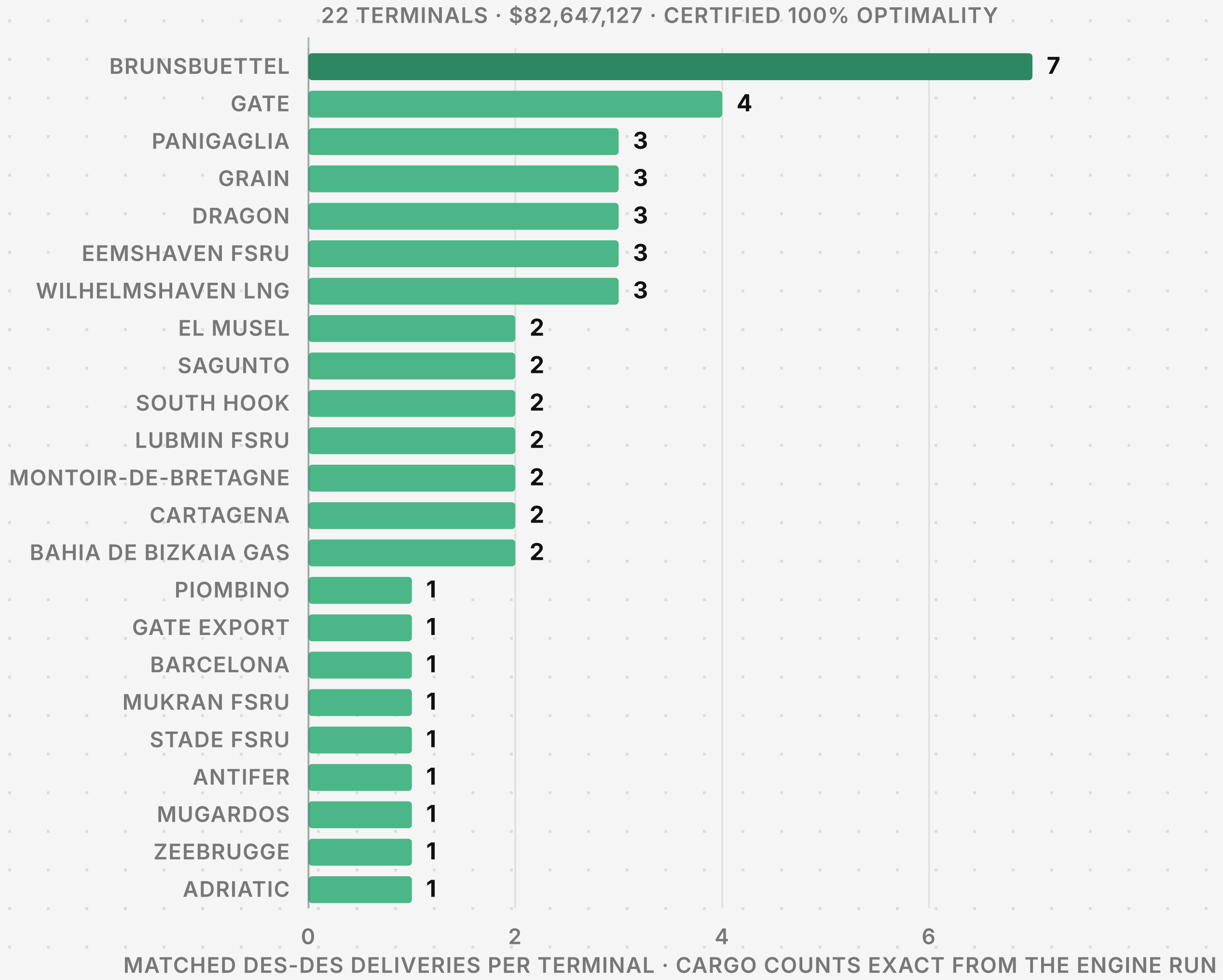
mean value per MMBtu of regional destination flexibility; cancellation $0.96, volume $0.31

30 longs, 24 shorts · eight European terminals **3 rights priced** · each in isolation **1,000 MC paths** · re-optimised per path

CALYPSO COMMODITIES

Thirty longs, twenty-four shorts, no ships

A pure DES-DES book across eight European terminals plus spot on both sides



REBUILT FROM THE ENGINE'S SANKEY · CARGO COUNTS EXACT

Longs on 130% HH + $5, TTF - $0.90 and THE - $0.98; shorts on THE, TTF, NBP, PEG and PSV discounts. Exact engine result: **$82,647,127 at certified 100% optimality**, forward curves of 29 July 2025.

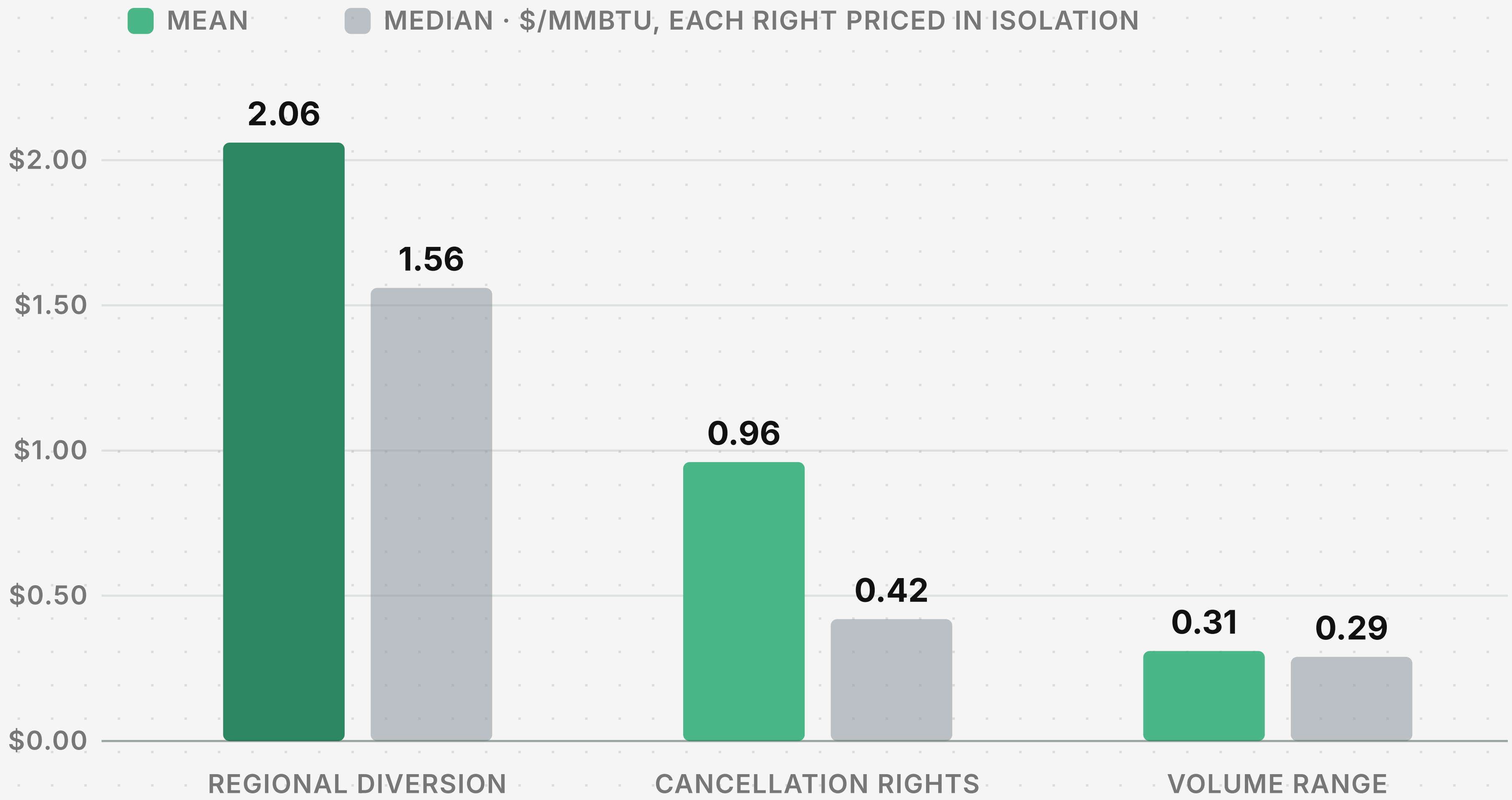
Three rights, priced one by one

The book with each flexibility against the identical book without it

01

The destination right dominates

Mean and median value of each flexibility, 1,000 MC paths per comparison



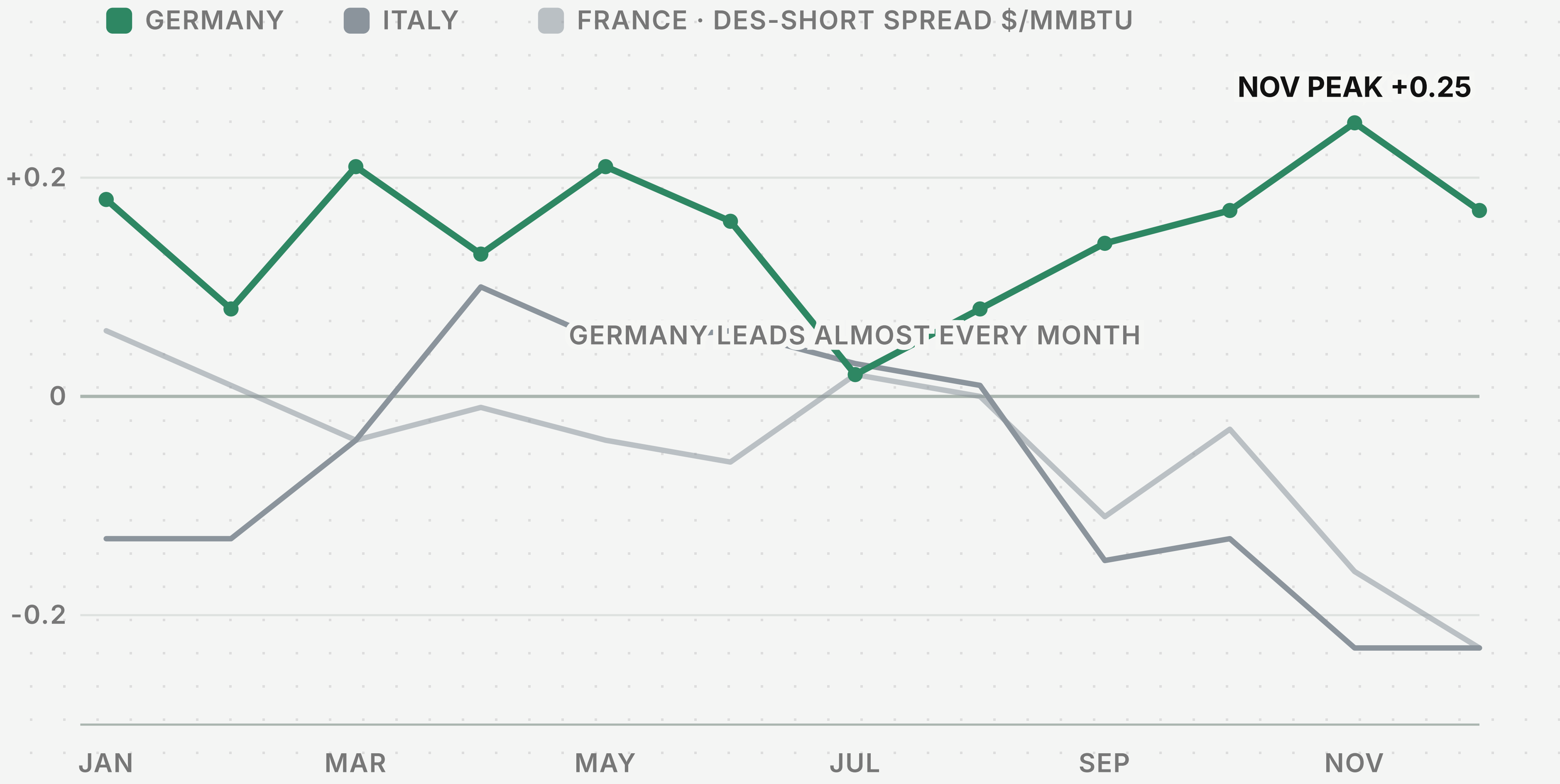
1,000 MC PATHS PER COMPARISON · FORWARD CURVES OF 29 JULY 2025

EXACT: REGIONAL $2.06 / $1.56 · CANCELLATION $0.96 / $0.42 · VOLUME $0.31 / $0.29 PER MMBTU

Regional diversion is worth twice the cancellation right and six times the volume range.

Germany wins on average, the others insure it

Monthly DES-short spreads per destination at current forwards



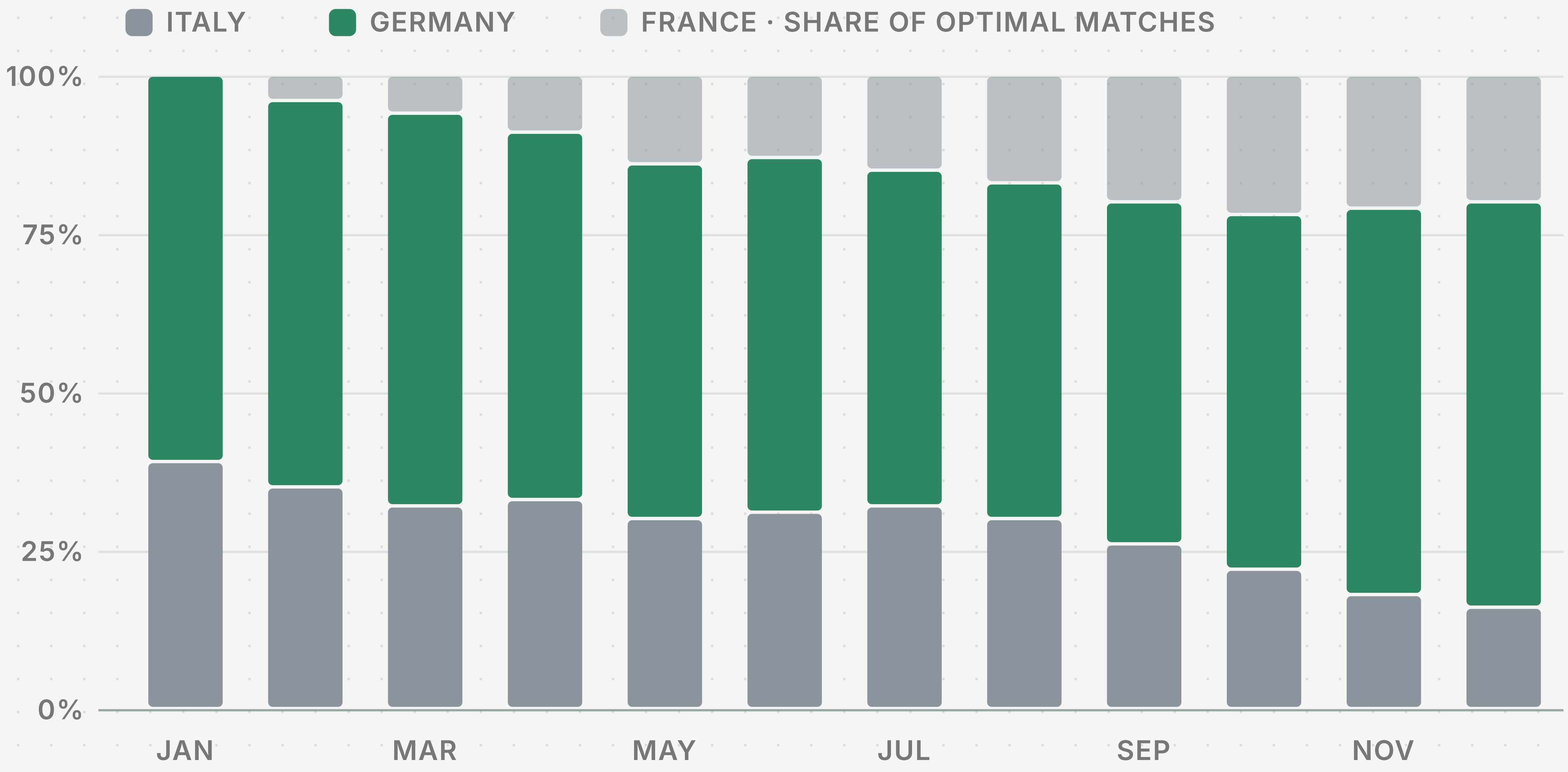
AT CURRENT FORWARDS · GERMANY SERIES EXACT, ITALY AND FRANCE TRACED WITH ANCHORED ENDPOINTS

GERMANY SERIES EXACT · FLEX MINIMUM −$0.97 VS BASE −$2.38/MMBTU · MC MEANS $14.9M VS $22.4M

The option value comes from the paths where Germany fails: the worst-case spread improves by $1.41/MMBtu.

Where the cargoes actually go

Destination chosen per month across 1,000 paths



DESTINATION CHOSEN PER MONTH ACROSS 1,000 PATHS · EXACT ENGINE SHARES

EXACT ENGINE SHARES · IN JANUARY, ITALY ALONE CONTRIBUTES ROUGHLY 39% OF THE TOTAL SPREAD

Italy carries January, France grows into autumn; dynamic allocation captures value every month.

CALYPSO COMMODITIES

THE VERDICT

On a pure DES book, choosing the destination beats every other right:

$2.06 against $0.96 for cancellation and $0.31 for volume.

Flexibility clauses are not equal. Pricing each one separately shows which is worth fighting for in the next negotiation, and which can be traded away cheaply.

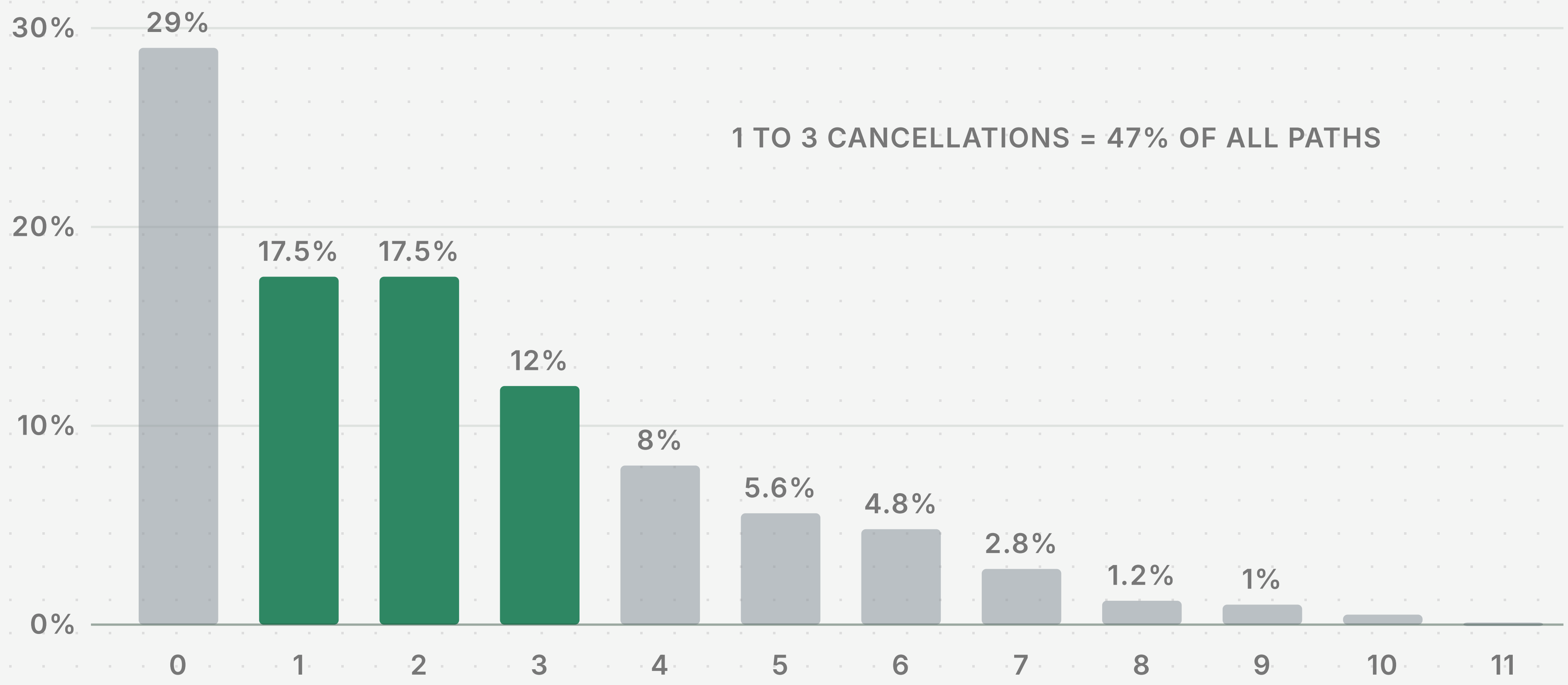
The other rights

Cancellation and volume, quantified the same way

02

Few cancellations, most of the value

Cargoes cancelled per simulated path: a 16% mean uplift from selective use



CARGOES CANCELLED PER PATH · SHARE OF 1,000 PATHS · 71% CANCEL AT LEAST ONCE

EXACT MC MEANS: $21.95M → $25.49M (+16%) · AT FORWARDS THE OPTION STAYS UNUSED

Only 15% of cargoes get cancelled; rights on three or four cargoes capture about 80% of the benefit. Volume flexibility adds $0.31, earned mostly in winter (December takes minimum volume in 80% of paths).

Takeaways

Which clause is worth the fight

✓ **The destination right dominates everything**
$2.06/MMBtu mean, driven by risk transfer: the worst-case spread improves from -$2.38 to -$0.97/MMBtu.

✓ **A few cancellations capture most of the value**
71% of paths cancel at least once, 1 to 3 cancellations cover 47%; rights on three or four cargoes capture ~80% of the benefit.

! **Each right is priced in isolation**
Combining them may overlap or compound; market correlations are not modelled here. Winter is where volume flexibility earns its keep.

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.

Cloud-based, any portfolio size · built and advanced daily by ~25 mathematicians, physicists and computer scientists.

Price every clause in your DES 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