

Gross notional is not risk.

Two portfolios, one lesson: a \$5.1B book engineered from offsets carries an order of magnitude less risk than a \$2.7B book built on conviction. Every number in this note is produced by the Kinetic Alpha energy decomposition engine — the same engine driving the interactive dashboard at kineticalpha.com/projects/energy-futures-decomposition.

\$5.07B ATLAS — GROSS NOTIONAL	\$133M ATLAS — NET DIRECTIONAL	\$2.66B VECTOR — GROSS NOTIONAL	\$866M VECTOR — NET DIRECTIONAL
-\$13M ATLAS — WORST SCENARIO	-\$102M VECTOR — WORST SCENARIO	97% ATLAS — LIQUIDITY T1+T2	100% VECTOR — LIQUIDITY T1–T3

Daniel Kaufman · Kinetic Alpha · July 2026

Marks are representative mid-2026 forwards; OI/volume snapshot as of June 30, 2026. Research and education only — not investment advice, not a trading system. Portfolios are illustrative constructions, not real positions.

EXECUTIVE SUMMARY

The experiment

We construct two portfolios from the same instrument universe — ICE, NYMEX/CME, and Nodal energy futures — and run both through the decomposition engine. **ATLAS** is a \$5.07B-gross book deliberately engineered so that nearly every exposure has an offsetting leg: cross-venue pairs, calendar spreads, crack-versus-crack tilts, heat-rate replications, and basis pairs. **VECTOR** is a \$2.66B-gross book expressing directional views with modest hedging: long crude and refining margin, long winter gas, long summer power, long carbon.

Both books use the same trade structures — the five archetypes from the dashboard's Playbook tab (locational, term-structure, crack, heat-rate, cross-venue) — and both keep $\geq 95\%$ of gross notional in benchmark, highly-liquid, or liquid contracts. The difference is purely how the legs relate to each other.

	ATLAS (offset book)	VECTOR (conviction book)	ratio
Positions / dated legs / factors	28 / 61 / 18	21 / 44 / 18	—
Gross notional	\$5.07B	\$2.66B	1.9×
Net directional notional (by sector)	\$133M	\$866M	6.5×
Net as % of gross	2.6%	32.5%	—
Worst stress-scenario loss	\$13M	\$102M	8.1×
Parametric VaR-95 (1-day, uncorr.)	\$11M	\$16M	1.4×
Estimated initial margin (all CCPs)	\$465M	\$228M	2.0×
Liquidity: T1+T2 / T1–T3 share	97% / 100%	87% / 100%	—

Three take-aways

- 1 · Risk lives in the net, not the gross.** ATLAS is 1.9× larger by notional yet loses 8× less in its worst stress scenario. Scale the two numbers: per dollar of gross notional, VECTOR carries roughly 15× the stress loss. Any risk report keyed on gross notional would rank these books exactly backwards.
- 2 · You cannot see the net without decomposition.** ATLAS's \$133M residual is invisible at the position level — it emerges only after 26 positions expand into 59 dated factor legs and the engine nets Henry Hub legs inside basis swaps, crude legs inside cracks, and venue lookalikes against each other.
- 3 · The market charges for gross anyway.** ATLAS posts an estimated \$465M of initial margin across five clearing houses — twice VECTOR's \$228M — because CCPs margin positions, not economics, and there is no inter-exchange offset. Offset-heavy books buy their safety with a permanent funding tax.

How the dashboard produces these numbers

Decomposition. Every contract maps to a weighted sum of atomic risk factors (434 factors, 476 contracts across ICE / NYMEX-CME / Nodal). A basis swap becomes +hub - Henry; a 3:2:1 crack becomes 2/3 RBOB + 1/3 ULSD - 1 WTI with gal->bbl conversion; a heat-rate future becomes +power - HR × gas; power MW scale by the NERC peak-hour calendar of each delivery month. Positions expand to dated monthly legs before anything is aggregated.

Gross notional = sum of |leg quantity × mark| over all dated factor legs — the sum both a prime broker and a CCP effectively see. **Net directional notional** = |sum of signed leg USD| within each sector, summed across sectors — directional exposure after every offset the decomposition can identify. (A stricter per-factor net, which treats each hub/grade as its own book, is reported alongside: ATLAS \$1,000M, VECTOR \$1,448M.)

Marks are representative mid-2026 forwards (HH \$3.40, WTI \$68, Brent \$72, TTF €32/MWh, PJM-W peak \$52...); EUR/GBP converted at 1.08/1.27. **Liquidity tiers** come from the dashboard's OI/volume snapshot (CFTC COT June 9, 2026 + exchange releases; estimates flagged). **Initial margin** uses the dashboard's coarse SPAN/STANS approximation (7–14% of notional by venue × sector, additive across CCPs). **Scenarios** are the dashboard's deterministic factor shocks. **VaR-95** is per-factor parametric, uncorrelated sum of squares, with venue lookalikes (NYMEX HH - ICE LD1, NYMEX - ICE WTI) netted as one risk factor and locational diffs volatized in absolute \$/unit terms.

Everything here can be reproduced interactively: load the two CSVs shipped with this note into the dashboard's Portfolio Analysis tab and walk the Overview to Positions to Tenor Strip to Cross-Commodity to Risk to P&L; views.

Known limitations

Deterministic scenarios are linear factor moves, not Monte-Carlo; the margin model is a budgeting heuristic, not SPAN; the uncorrelated VaR ignores cross-sector correlation (it will understate a book that is long crude AND long cracks in a crash — visible in VECTOR's recession scenario exceeding its VaR); marks are static snapshots. These are the same caveats published on the dashboard page.

ATLAS — the \$5B book that is barely a position

28 positions expanding to 61 dated legs across 18 factors and 16 delivery months. Every sleeve is one of the dashboard's five playbook archetypes, sized up to institutional scale and paired so the residual stays under the \$250M mandate.

Sleeve (playbook archetype)	Trades	What offsets what
Cross-venue netting	10	NYMEX WTI vs ICE WTI (5.5k lots each), ICE Brent vs NYMEX Brent (5.5k), NYMEX HH vs ICE LD1 (unit-matched 45M MMBtu), ICE PJM-W vs Nodal PJM-W (4,500 MW-months), Gasoil vs ULSD (HOGO-style)
Term structure	6	HH Oct6/Jan7 cal spread (3k), Brent Dec6/Dec7 (2.5k), WTI Dec6/Jun7 (2k), TTF Q1-27 vs Sum-27 (800/400 — hour-weighted), EUA Dec6/Dec7 (800)
Crack vs crack	2	Long 2,200 3:2:1 vs short 2,200 2:1:1 — crude legs cancel exactly; residual is a ±14M-gal gasoline-vs-distillate tilt
Heat rate	4	Long ERCOT-Houston spark future (400), long PJM-W peak vs short 7.5-HR TCO gas replication (400/2,200), short SP15 spark (200)
Locational + seasonal	4	Long Waha basis vs short HSC basis (4k/4k — Henry legs cancel), AECO Nov-26 vs Feb-27 seasonal (4k/4k)
Cross-scheme pair	2	Long 700 EUA vs short 980 UKA, USD-matched

\$5.07B GROSS	\$133M NET (SECTOR)	2.6% NET/GROSS	97% T1+T2 SHARE	\$465M EST. IM	\$11M VaR-95
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Residual by design: the book's entire net is -\$70M natural gas (the Waha–HSC location view plus spark gas legs) and +\$61M power (the spark power legs) — the two sides of a deliberate long-generation-margin stance — plus a -\$3M refined tilt. Crude and emissions net to zero to the dollar.

VECTOR — the smaller book that actually takes risk

21 positions to 44 legs to 18 factors. Same structural vocabulary — outrights, cracks, cal spreads, basis, a spark — but the legs point the same way: long the barrel, long the refining margin, long winter gas, long summer power, long carbon. Hedges (a Dubai short, a 2:1:1 short, cal spreads, one cross-venue pair) trim but don't neutralize.

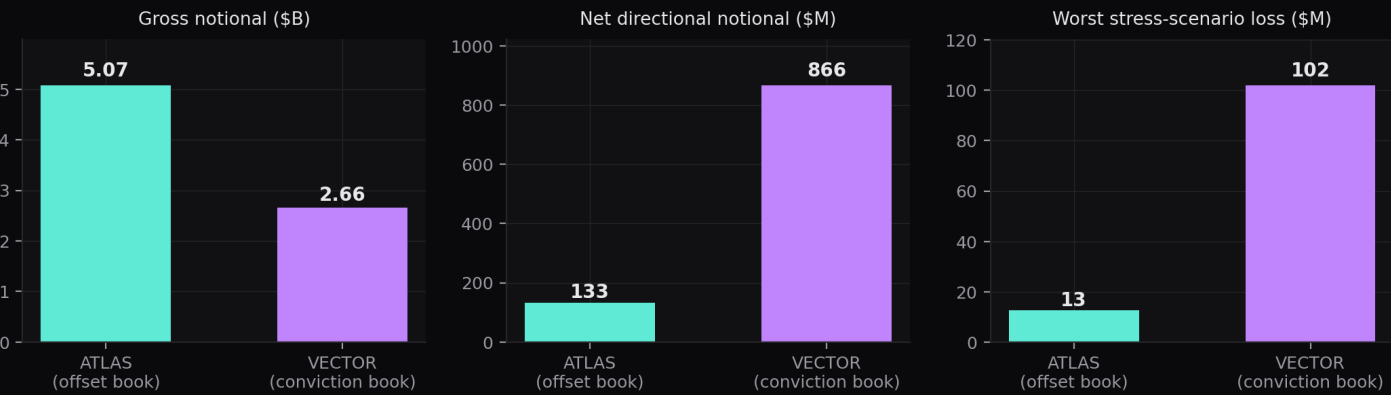
Sleeve (playbook archetype)	Trades	What offsets what
Directional crude	4	Long 3,400 Brent Dec-26, long 2,200 WTI Sep-26, long 800 Midland WTI (HOU); short 1,200 Dubai as a partial sweet-sour hedge
Refining margin	4	Long 1,500 3:2:1 cracks, long 1,000 Gasoil–Brent cracks, long 800 Sing Gasoil–Dubai cracks; short 700 2:1:1 as a partial trim
Directional gas	3	Long 1,800 HH Dec-Feb winter strip, long 1,000 TTF Q1-27, long 2,000 Waha basis
Summer power + spark	4	Long PJM-W Q3-27 (200), ERCOT North + Houston Jul/Aug-27 (250), long 300 ERCOT-Houston spark futures
Carbon	1	Long 1,000 EUA Dec-26
Shape + venue	4	HH and Brent cal spreads (2.5k each), one NYMEX-vs-ICE WTI pair (1.5k), Murban–Dubai quality spread (1.2k)

\$2.66B GROSS	\$866M NET (SECTOR)	32.5% NET/GROSS	100% T1–T3 SHARE	\$228M EST. IM	\$16M VaR-95
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The nets are the thesis: +\$184M crude, +\$229M refined (the crack stack), +\$231M natural gas, +\$139M power, +\$82M emissions — \$866M of directional exposure, all pointing at the same macro state (tight energy, strong refining, hot summer, expensive carbon). That concentration is exactly what the scenario table punishes.

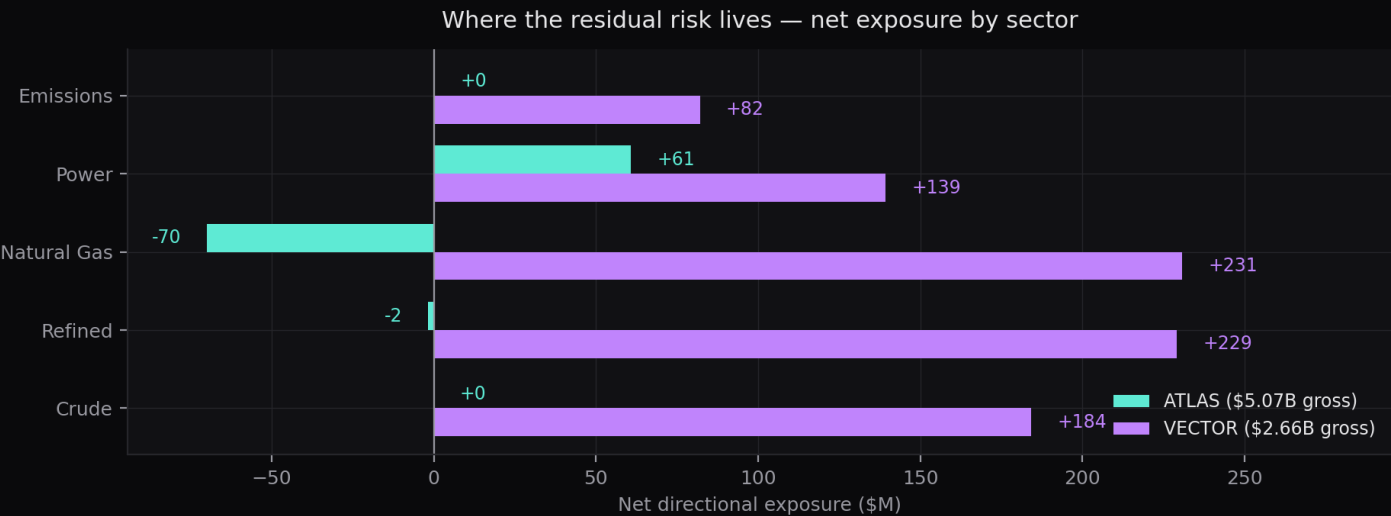
The headline

Size is not risk — the \$5B book is the safer one



Left to right: ATLAS is nearly twice the book by gross notional; one-sixth the book by net directional notional; one-eighth the book by worst-case stress loss. Gross notional sorts these portfolios in exactly the wrong order on both risk measures.

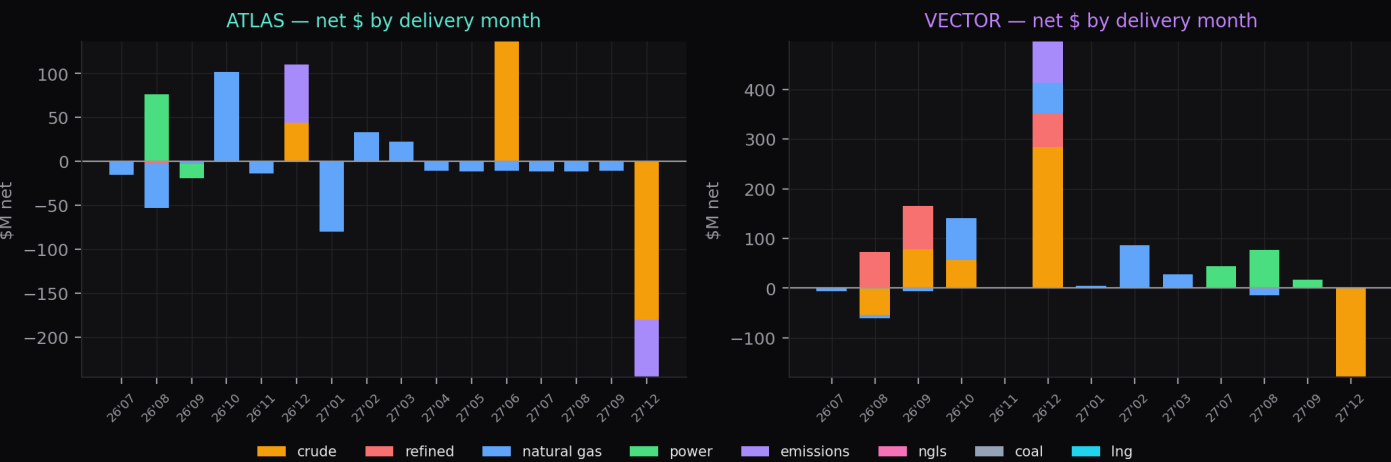
Where the net lives



ATLAS's residuals are small, two-sided, and deliberate (short gas / long power ~ a generation-margin stance). VECTOR's are large, one-sided, and correlated — five sectors all long the same macro regime.

Tenor structure — the dimension gross notional can't see

Tenor structure — where each book lives on the curve



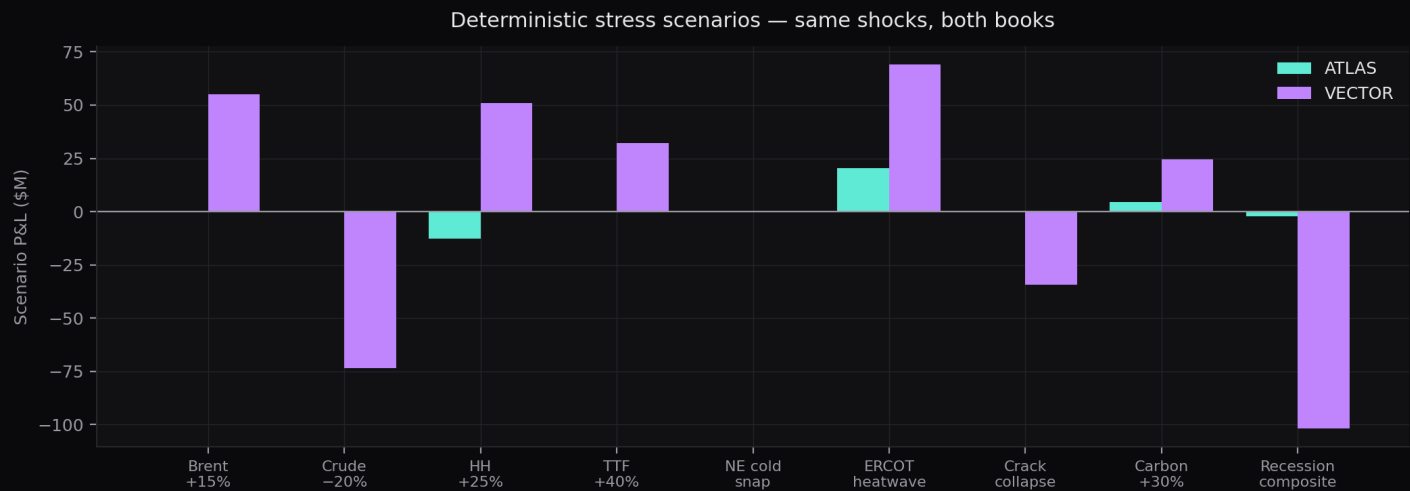
ATLAS shows the classic offset-book signature: paired positive/negative months (Oct-26 vs Jan-27 gas, Dec-26 vs Dec-27 Brent and EUA, Nov-26 vs Feb-27 AECO) that sum to nothing but still carry curve-shape risk — the one risk class net notional understates, and the reason the Tenor Strip view exists. VECTOR stacks one-directional exposure in specific windows: the Dec-26 tower (crude + carbon + winter gas) is a single correlated bet on one delivery season.

Cross-commodity view — the heat-rate matcher

Book	Pair (delivery geography)	Implied HR	Position shape	Matched MWh
ATLAS	PJM Western Hub ← TCO / Dominion South	8.2	Long spark — short gas, long power	511,628
ATLAS	PJM Western Hub ← TCO / Dominion South	—	Power only — no matched gas	0
ATLAS	PJM AD Hub ← TCO / Dominion South	—	Gas only — no matched power	0
ATLAS	PJM Dominion ← TCO Pool	—	Gas only — no matched power	0
VECTOR	PJM Western Hub ← TCO / Dominion South	—	Power only — no matched gas	0
VECTOR	PJM Western Hub ← TCO / Dominion South	—	Power only — no matched gas	0
VECTOR	ERCOT North ← Katy / HSC	—	Power only — no matched gas	0

The matcher pairs every power exposure with its marginal gas hub and computes the implied heat rate. ATLAS's PJM-W × TCO replication reads 8.2 — deliberately 0.7 heavy versus the 7.5 listed spark, leaving a small residual gas short the Overview tab surfaces. VECTOR's sparks are one-legged longs.

Stress scenarios — same shocks, different books

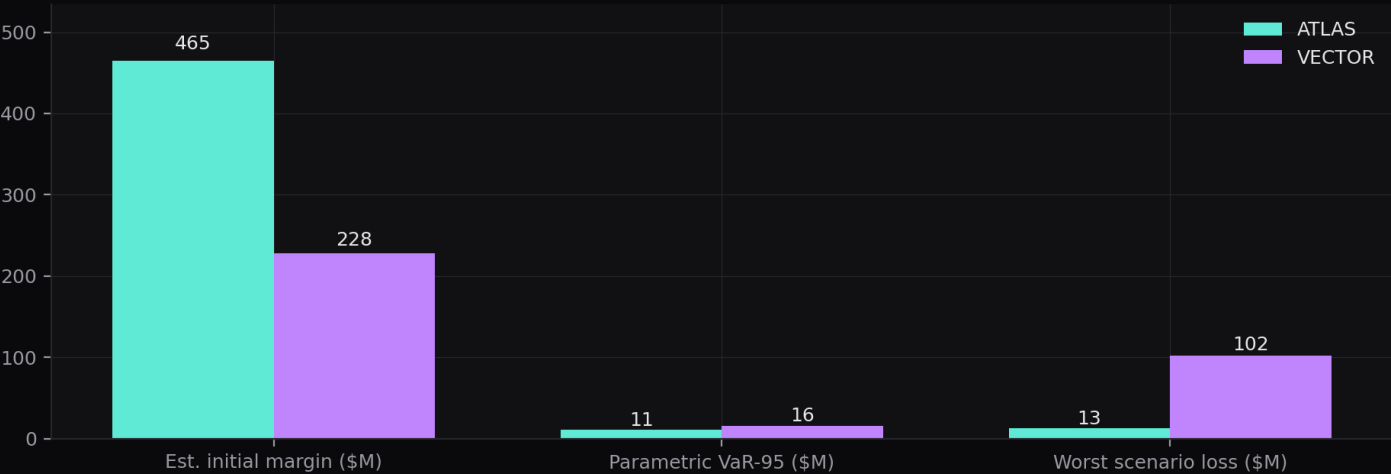


Scenario	ATLAS P&L	VECTOR P&L
Brent +15% (supply shock)	-\$0.2M	\$55.1M
Crude -20% (demand break)	\$0.3M	-\$73.5M
Henry Hub +25%	-\$12.6M	\$50.8M
TTF +40% (EU supply event)	-\$0.4M	\$32.2M
NE cold snap	\$0.0M	\$0.0M
ERCOT heatwave	\$20.3M	\$69.2M
Crack collapse (refined -15%, crude flat)	\$0.3M	-\$34.4M
Carbon tightening (EUA +30%)	\$4.6M	\$24.6M
Recession composite	-\$2.3M	-\$101.9M

ATLAS's largest loss anywhere on the board is -\$12.6M (HH +25% — the deliberate gas short). VECTOR loses -\$102M in the recession composite and -\$74M in a crude break, because its five sector nets fire together. Note what a gross-notional limit would have done here: capped ATLAS, waved VECTOR through.

The margin tax — what offsetting actually costs

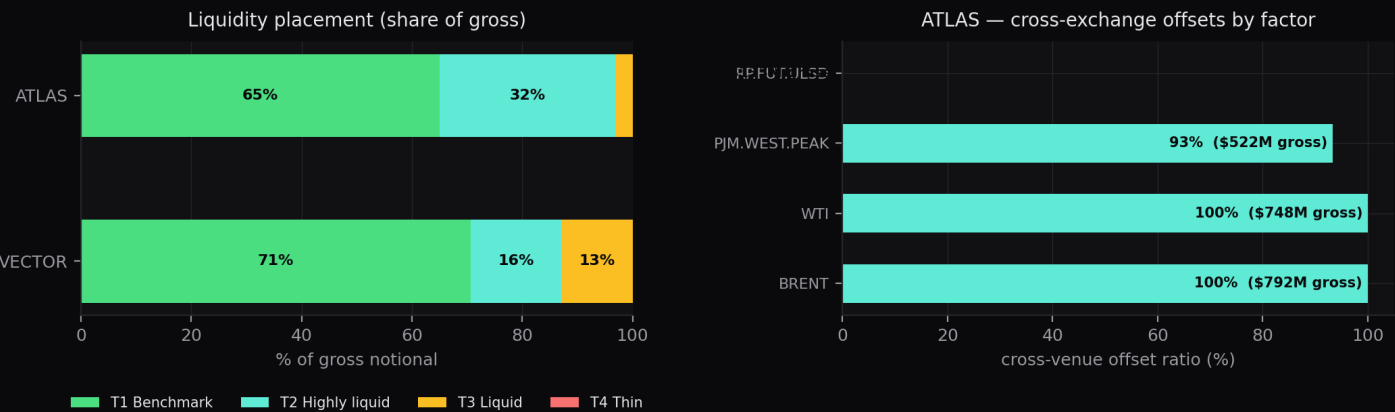
The margin tax — CCPs charge by position, risk lives in the net



Venue	ATLAS gross	ATLAS est. IM	VECTOR gross	VECTOR est. IM
ICE	\$2,628M	\$231M	\$1,703M	\$137M
NYMEX	\$1,496M	\$129M	\$605M	\$55M
NYMEX/ICE	\$706M	\$71M	\$352M	\$35M
NODAL	\$243M	\$34M	\$0M	\$0M

Clearing houses margin what they clear, and no CCP offsets a position held at another. ATLAS posts ~\$465M of estimated IM against ~\$11M of VaR (a 42:1 collateral-to-risk ratio); VECTOR posts ~\$228M against ~\$16M (14:1). The offset book is safer AND more expensive to carry — if the basis it captures doesn't out-earn the funding cost of the extra quarter-billion of margin, size for its own sake destroys the trade. This is the collateralization thesis of this site in one table.

Liquidity placement and cross-exchange offsets



Both books satisfy the liquidity mandate — ATLAS holds 97% of gross in benchmark/highly-liquid contracts (100% within T1–T3); VECTOR 87% T1+T2 and 100% T1–T3, with the balance in quality spreads (Murban–Dubai, Sing Gasoil–Dubai) that are liquid but below-benchmark tier. The right panel is the dashboard's cross-exchange table for ATLAS: the same factor held at two clearing houses with offset ratios at or near 100% — economically flat, operationally two margin calls.

Top net factor exposures (after decomposition)

ATLAS — factor	net \$	VECTOR — factor	net \$
NG NYMEX_HH	\$153M	CL ICE_DUBAI	-\$226M
NG HH	-\$153M	NG NYMEX_HH	\$184M
RP.FUT.ULSD	-\$133M	CL BRENT	\$173M
NG HSC	-\$130M	CL WTI	\$95M
RP.FUT.GASOIL	\$98M	RP.FUT.GASOIL	\$88M
NG WAHA	\$64M	CL ICE_MURBAN	\$86M
EMI.FUT.EUA	\$57M	EMI.FUT.EUA	\$82M
EMI.FUT.UKA	-\$57M	NG TTF	\$81M
PWR ERCOT.HOUSTON.PEAK	\$42M	RF.FUT.ICE_SING_GO	\$69M
PWR PJM.WEST.PEAK	\$35M	RP.FUT.RBOB	\$58M

REPRODUCE IT

Ten minutes in the dashboard

1. Open kineticalpha.com/projects/energy-futures-decomposition to Portfolio Analysis to upload *portfolio_ATLAS.csv* (drag-and-drop). The KPI strip shows the gross/net divergence immediately.
2. Overview: the Net Factor Exposure bars are stubs on a \$5B book — the netting made them disappear. Switch the portfolio to *portfolio_VECTOR.csv* and the same bars become towers.
3. Positions to Cross-Commodity: the provenance table shows each basis/crack/spark splitting into legs; the venue table shows margin stacking by clearing house; the cross-exchange table shows ATLAS's ~100% offsets.
4. Tenor Strip: ATLAS's paired $\pm$ months vs VECTOR's Dec-26 tower.
5. Risk: run 'Recession composite' on both. Then use the portfolio switcher's Compare mode to overlay them.
6. Playbook tab: the five archetypes these books are built from, each with its own walkthrough.

CONCLUSION

Measure the net, price the gross

Notional is what a portfolio weighs, not what it risks. The decomposition engine exists because in energy — where every contract is secretly a bundle of location, calendar, quality, and venue legs — the distance between gross and net is enormous and structural. A \$5.07B book collapsed to \$133M of directional exposure; a \$2.66B book concentrated \$866M of it. Risk limits, hedge-fund leverage stats, and headline 'notional outstanding' figures that stop at gross miss the only number that predicts the P&L; distribution.

But the market prices gross anyway: margin, broker balance-sheet, and operational load all scale with legs, not with nets. The practical frontier for an energy book is therefore not 'how big is it?' but 'what does each dollar of margin buy in captured basis?' — and that is a question you can only answer after full decomposition.

Appendix — position files

portfolio_ATLAS.csv (26 rows) and *portfolio_VECTOR.csv* (21 rows) accompany this note in the dashboard's native CSV schema (contract_code, direction, lots, tenor, structure, back_tenor, ...). Marks table and analytics harness available on request.

Daniel Kaufman · Kinetic Alpha · dkaufmanrisk@gmail.com · July 2026. Research and education only. Not investment advice; not a trading system; not a settlement-grade risk system. Illustrative portfolios; representative marks; coarse margin heuristics; deterministic scenarios; uncorrelated parametric VaR. OI/volume snapshot June 30, 2026.