

Economic Density Loss

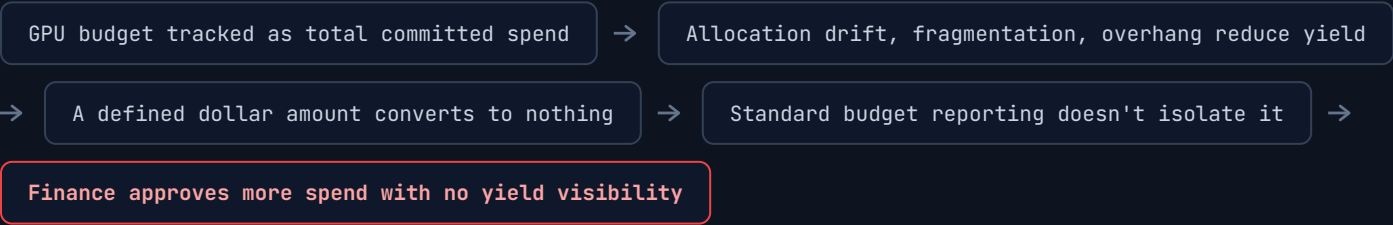
DEFINITION

The economic efficiency lost when GPU infrastructure runs below its achievable workload density.

FRAMEWORK FLOW

01 The Condition GPU fleet spend is tracked in dollars — reservation costs, committed spend, monthly accelerator budget — independent of whether that spend converts to useful compute.	02 The Boundary Allocation drift, fragmentation, and reservation overhang each reduce Effective GPU Yield — the point where provisioned spend and productive spend stop being the same number.	03 Failure State A defined dollar amount of monthly (and annualized) provisioned spend is not converting to effective compute work — quantifiable, but invisible on a standard budget line that only tracks total commitment.	04 Consequence Finance approves continued or expanded GPU spend against the provisioned budget, with no visibility into how much of it is actually unproductive — the yield problem never reaches the conversation where it would matter most.
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Failure State: Provisioned Spend Isn't Productive Spend



THE DIAGNOSTIC SIGNAL

SPEND OWNERSHIP Ask whether monthly GPU spend is tracked against committed capacity. It always is — confidently, and correctly, as far as it goes.	COMPOSITE OWNERSHIP Ask who translates that spend into a productive-vs-wasted split. Nobody does by default — the yield problem lives in engineering telemetry, not in the budget line finance actually reviews.
TRIGGER CONDITION Any gap between Effective GPU Yield and 100% produces a nonzero Economic Density Loss; a fleet at full yield has none to report.	REMEDICATION SHAPE An explicit \$/mo and annualized Economic Density Loss figure as a standing line next to the GPU budget, not a separate engineering-only metric.

THE CFO TRANSLATION

MONTHLY LOSS \$/mo provisioned accelerator spend not converting to effective compute work — the recurring, current-state figure.	ANNUALIZED LOSS The monthly figure projected across a budget year — the number that changes a capital planning conversation.
RECOVERABLE VS. STRUCTURAL The portion of the loss addressable through scheduling and allocation fixes, versus the portion that reflects a genuine, justified reservation.	

ARCHITECTURAL RELATIONSHIPS

#89 Effective GPU Yield RELATED MODERATE Economic Density Loss is the dollar expression of reduced Effective GPU Yield — the CFO-readable translation of productive capacity lost to allocation drift, fragmentation, and reservation overhang.	#91 Phantom Scarcity RELATED MODERATE Co-resident in the GPU Utilization Analyzer as paired scarcity/loss metrics.
#92 Queue–Idle Paradox RELATED MODERATE Co-resident in the GPU Utilization Analyzer as paired paradox/loss metrics.	#93 Fragmentation Tax RELATED MODERATE Co-resident in the GPU Utilization Analyzer — Fragmentation Tax is the mechanism; Economic Density Loss is its cost.

ANCHOR /gpu-utilization-analyzer/

FRAMEWORK HOME

Vendor and hardware-class agnostic — the dollar translation of yield loss applies to any provisioned GPU fleet regardless of scheduler or accelerator vendor.

"The GPU budget line is accurate. It just isn't telling anyone how much of that spend is actually working."