

DATA CENTRE CONTROLLED PROOF REPORT

Data Centre Allocation Waste

Detailed results for the 5,000 asset, 84 day controlled proof

Report field	Evidence record
Classification	Evidenced Current controlled synthetic execution
Proof result	PASS
Raw evidence	420,000 daily rows
Asset population	5,000 assets
Governed executions	1,157
Prepared for	Urbyte Pty Ltd
Report date	18 September 2026

Main conclusion

The controlled data-centre proof passed. Urbyte derived allocation-waste classifications from a deterministic synthetic 84-day evidence fixture. Keelo governed every qualifying condition through accountable ownership, authority-controlled execution, durable receipt, verified outcome and exact reconciliation. All 5,000 assets reconciled exactly once, with zero duplicate executions and zero unresolved obligations.

Claim boundary

This is a controlled system proof, not a production deployment. Cost and emissions figures are analytical exposure estimates produced from stated reference values. They are not realised savings, measured emissions reductions, ISO 14001 certification or production environmental performance.

EXECUTIVE RESULTS

Controlled proof at a glance

Measure	Recorded result
Final result	PASS
Raw evidence	420,000 rows
Distinct assets	5,000
Evidence period	84 consecutive days
Verified assets	4,323 • 86.46%
Actionable verified assets	1,157 • 23.14%
Verified, no action	3,166 • 63.32%
Unverifiable assets	677 • 13.54%
Controlled executions	1,157
Durable receipts / verified outcomes	1,157 / 1,157
Duplicate executions / unresolved	0 / 0
Runtime	27.684 seconds

What the result means

- The proof exercised a second operational domain without changing Keelo Core.
- Urbyte performed domain-specific evidence qualification and allocation-waste verification outside Core.
- Keelo preserved evidence provenance, persistent state, authority, ownership, controlled execution, receipts, outcome verification and reconciliation.

EVIDENCE IDENTITY

Reproducible input and proof state

Evidence field	Recorded value
Branch	[REDACTED internal detail]
Proof commit	[REDACTED internal detail]
Commit message	[REDACTED internal detail]
Fixture	[REDACTED internal detail]
Fixture SHA-256	[REDACTED internal detail]
Raw rows	420,000
Distinct assets	5,000
Evidence window	84 consecutive days
Proof runtime	27.684 seconds

Recorded estate scale

Capacity measure	Evidence total
Provisioned CPU	216,792 cores
Provisioned memory	867,168 GB
Recorded energy	9,994,375.817 kWh

The source fixture contained observations, not pre-written waste classifications, actions, receipts, savings values, emissions outcomes or aggregate proof results. Those outputs were derived by the controlled pathway.

CLASSIFICATION

System-derived asset classification

Classification	Assets	Share of assets
Verified	4,323	86.46%
Actionable verified	1,157	23.14%
Verified, no action	3,166	63.32%
Unverifiable and excluded	677	13.54%
Reconciled exactly once	5,000	100.00%

Unverifiable evidence reasons

Recorded reason	Occurrences
Duplicate evidence date	146
Invalid telemetry	381
Low evidence confidence	150
Missing telemetry	238
Non-contiguous evidence	146

Reason occurrences can overlap within a single asset. The authoritative count is 677 distinct unverifiable assets. Excluded assets were not converted into actionable conditions.

Control interpretation

The exclusion path is itself a positive control result: incomplete, duplicated, invalid, low-confidence or non-contiguous evidence was retained as an explainable classification instead of being forced into action.

VERIFIED ALLOCATION WASTE

System-derived resource findings

Measure	Verified result
Verified stranded CPU	44,617.23616 cores
Verified stranded memory	178,468.944638 GB
Attributable idle energy	2,055,593.798504 kWh
Provisioned power exposure	1,529.503056 kW

Relative interpretation

Derived ratio	Result
Stranded CPU / provisioned CPU	20.58%
Stranded memory / provisioned memory	20.58%
Attributable idle energy / recorded energy	20.57%
Average idle energy per actionable asset	1,776.66 kWh
Average stranded CPU per actionable asset	38.56 cores
Average stranded memory per actionable asset	154.25 GB

Ratios and per-actionable-asset averages are arithmetic interpretations of the preserved proof totals. They support comprehension only; the preserved absolute figures remain the authoritative results.

What was not established

- No physical server was shut down or resized in a production data centre.
- No post-action energy meter, billing invoice or capacity record was used to prove a realised outcome.

CONTROLLED ANALYTICAL EXPOSURE

Cost and emissions reference derivation

Reference values were applied only after waste verification to quantify analytical exposure. They do not transform the controlled proof into a realised financial or environmental outcome.

Measure	Controlled result	Status
Electricity reference	AUD 0.30 per kWh	Input assumption
Emissions reference	0.65 kg CO2-e per kWh	Input assumption
Attributable electricity-cost exposure	AUD 616,678.14	Estimated exposure
Attributable emissions exposure	1,336,135.969 kg CO2-e	Estimated exposure
Attributable emissions exposure	1,336.136 t CO2-e	Estimated exposure
Realised financial outcome	NOT ESTABLISHED	Not claimed
Realised environmental outcome	NOT ESTABLISHED	Not claimed

Required evidence for realised claims

- Authorised production evidence tied to identifiable infrastructure and approved actions.
- Pre-action and post-action capacity, energy and billing measurements over an appropriate comparison period.
- Documented reference methodology, boundary, factor version, exclusions and independent review where required.
- A customer-approved reconciliation connecting the action, external receipt and measured outcome.

KEELO GOVERNED EXECUTION

Condition-to-outcome control results

Control stage	Recorded result
Persistent conditions established	1,157
Authorised actions	1,157
Controlled external executions	1,157
Durable receipts	1,157
Outcomes verified	1,157
Duplicate executions	0
Unresolved obligations	0

Execution chain

Raw evidence → Urbyte verification → persistent Keelo condition → accountable owner → authority check → authorised action → controlled external execution → durable receipt → outcome verification → reconciliation.

Integrity controls demonstrated

- Every asset was classified exactly once.
- Every persistent condition traced to qualifying raw evidence.
- Every action and receipt traced to an authorised condition.
- Every completed action reconciled to a verified outcome.
- Restarted service composition reconstructed persisted transactions.
- Duplicate execution replay produced no second external effect.

VALIDATION GATES

Build, test and repository validation

Validation gate	Result
Build	PASS
Typecheck	PASS
Integration typecheck	PASS
Architecture boundary checks	PASS
Verification suite	510 / 510 tests across 45 / 45 files
Firestore integration	20 / 20 tests across 2 / 2 files
[REDACTED internal reproduction instructions]	PASS
Working tree after commit	Clean

Regression and architecture evidence

- Keelo Core remained unchanged.
- Existing 1,000-service and 5,000-service mobile proof fixtures remained unchanged.
- Both mobile proofs passed again during the data-centre proof validation.
- The data-centre domain logic remained outside organisation-neutral Keelo Core.

These results support the architectural claim that the governed execution model can be applied across distinct measurable-resource domains while preserving the same control boundaries. They do not establish unlimited domain generality or production readiness.

MATURITY AND CLAIM CONTROLS

Evidence classification

Maturity class	What is supportable
Evidenced Current	Controlled 5,000-asset, 84-day synthetic proof; exact classifications; verified resource findings; governed executions; receipts; outcomes; reconciliation; duplicate safety; validation gates.
Next Proving Work	Authorised operational export; production persistence and execution configuration; observed post-action capacity, energy and billing outcomes; independent review and repeatability.
Destination Case	Continuous production verification and authority-controlled remediation with independently assured financial and environmental results.

Safe statement

Urbyte and Keelo completed a controlled synthetic data-centre allocation-waste proof covering 5,000 assets and 420,000 daily evidence rows. The proof identified verified resource exposure and governed 1,157 authorised controlled actions through receipt, outcome verification and exact reconciliation, with zero duplicate executions and zero unresolved obligations.

Statements not supported by this proof

- “Keelo saved AUD 616,678.14 in a live data centre.”
- “Keelo reduced emissions by 1,336.136 tonnes CO2-e.”
- “The system is ISO 14001 certified or proves ISO 14001 conformity.”
- “The platform autonomously shuts down production infrastructure.”

NEXT PROVING WORK

Recommended evidence programme

Priority	Proving action	Acceptance evidence
1	Replay from the locked proof commit and fixture.	Matching classifications, resource totals and reconciliation; preserved environment and dependency record.
2	Run an authorised, de-identified operational export.	Source provenance, lawful authority, field mapping, exclusion trace and organisation approval.
3	Use approved production persistence and an authorised execution boundary.	Security review, access controls, rollback path, external receipt and operational approval.
4	Measure post-action resource outcomes.	Capacity, energy and utilisation baselines plus post-action observations over an approved period.
5	Establish financial outcomes.	Invoice-derived rates, approved attribution method and reconciled realised savings.
6	Establish environmental reporting.	Applicable boundary, emissions factor, factor date, calculation method and independent assurance where required.

Destination case

The destination is an authorised production deployment in which Urbyte continuously verifies measurable allocation waste from operational evidence and Keelo governs the resulting conditions through accountable ownership, authority-controlled execution, durable receipts, verified recovery outcomes and auditable reconciliation.

EVIDENCE APPENDIX

Authoritative result register

Evidence object	Authoritative value
Proof state	PASS
Commit	[REDACTED internal detail]
Fixture digest	[REDACTED internal detail]
Scope	5,000 assets × 84 days = 420,000 rows
Classification	4,323 verified; 1,157 actionable; 3,166 verified no action; 677 unverifiable
Resource finding	44,617.23616 CPU cores; 178,468.944638 GB memory; 2,055,593.798504 kWh idle energy
Governance result	1,157 conditions, actions, executions, receipts and verified outcomes
Reconciliation	5,000 exactly once; 0 duplicate executions; 0 unresolved obligations
Validation	510 / 510 verification tests; 20 / 20 Firestore integration tests

Report conclusion

CONTROLLED DATA-CENTRE ALLOCATION-WASTE PROOF PASSED. The record demonstrates governed, traceable and duplicate-safe handling of verified allocation-waste conditions in a controlled synthetic environment. Production deployment and realised financial or environmental outcomes remain the next proving boundary.