

DECISION EVIDENCE PACK / PUBLIC SAMPLE

800V DC and SST-based power architecture

What does the accepted public evidence establish about commercial field operation for hyperscale data-center power - and what remains unresolved?

Current decision state

One named operator reported commercial operation of a materially relevant 10kV AC to SST to 800VDC architecture at one named campus. This establishes a single observed instance. It does not establish broad adoption, independent performance validation, or repeat procurement.

This five-page artifact demonstrates the structure of a customer-facing Decision Pack using only already-public evidence. It is not a customer deliverable, engineering design, safety opinion, procurement recommendation, or claim of full PDRE validation.

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VERSION 1.0 / PUBLIC / CUSTOMER-NEUTRAL

01 / EXECUTIVE DECISION FRAME

What can be defended at the cut-off?

Decision affected: whether public evidence is sufficient to treat 800V DC / SST architecture as commercially field-operated in at least one hyperscale data-center setting.

EVIDENCE DIMENSION	CURRENT STATE	BOUNDARY
Architecture possibility	SUPPORTED	Public records support technical architecture and system demonstrations.
System validation	SUPPORTED	Source-reported demonstrations; performance claims remain attributed.
Named field deployment	OBSERVED - SINGLE INSTANCE	One named operator and one named campus.
Long operating history	UNKNOWN	Initial commercial operation does not establish duration or reliability.
Multi-entity replication	UNKNOWN	No accepted independent operator replication in the approved packet.
Independent validation	UNKNOWN	The qualifying source is an operator publication, not a third-party audit.
Repeat procurement	UNKNOWN	No accepted evidence of repeat buying behavior.
Industry-scale adoption	NOT ESTABLISHED	One observed instance and standards activity do not establish broad adoption.

Decision
implication

The narrow field-operation claim may move from NOT ESTABLISHED to EVIDENCE ACCEPTED - SINGLE INSTANCE. Any broader claim about reliability, qualification, replication, economics, or industry adoption remains unsupported or unresolved.

02 / EVIDENCE AND COUNTER-EVIDENCE

Why one record qualifies and two do not

Qualifying evidence

EVIDENCE DIMENSION	CURRENT STATE	BOUNDARY
Record	HUMAN REVIEW ACCEPTED	L1-EV-CML-PDRE-001-FIELD-DEPLOYMENT-001
Publisher	CHINDATA	Primary operator publication dated 2026-07-02.
Environment	NAMED CAMPUS	Chindata Sangyuan Cloud Computing Campus near Beijing.
Architecture	10kV AC - SST - 800VDC	Reported commercial operation of an SST-based intelligent DC power system.
Supports	ONE FIELD INSTANCE	One named operator, one named campus, materially relevant architecture.
Does not support	BROADER CLAIMS	No independent performance audit, operating history, replication, repeat procurement, or industry adoption.

Preserved counter-evidence

EVIDENCE DIMENSION	CURRENT STATE	BOUNDARY
Vertiv path	PLANNED DEPLOYMENT	Future commercialization, customer pilots, and ramp do not prove current field operation.
Siemens + Reinhausen	UNDER DEVELOPMENT	Development for future deployment does not prove current field operation.

Primary source: Chindata operator publication. Public evidence case: structureevidence.org/cases/800vdc/.

03 / DEPENDENCY AND QUALIFICATION GAP MAP

A field instance does not qualify every subsystem

EVIDENCE DIMENSION	CURRENT STATE	BOUNDARY
SST	FIELD DEPLOYED - SINGLE INSTANCE	Named 10kV-to-800VDC commercial-operation record.
SiC / GaN	UNKNOWN	No accepted item-level state in the approved public packet.
HF transformer / magnetics	UNKNOWN	No accepted item-level state.
Insulation / partial discharge	UNKNOWN	Transferred dependency; qualification evidence absent.
Thermal management	UNKNOWN	Transferred dependency; qualification evidence absent.
DC protection / SSCB	WATCH	New critical dependency; no subsystem qualification inferred.
Power rack / sidecar	SYSTEM VALIDATION	Source-reported demonstrations support sample-bench-tested state only.
Busbar / connectors	UNKNOWN	Transferred dependency; item-level evidence absent.
Standards / certification	DEVELOPMENT	Draft work does not establish completed certification.

Qualification boundary

A decision to investigate or pilot the architecture is not the same as a decision to deploy it. Customer-specific load, protection, insulation, thermal, maintainability, safety, and certification requirements remain outside this public sample.

04 / ACTION OPTIONS AND SERVICE-CYCLE CONTROL

What could move the decision next?

EVIDENCE DIMENSION	CURRENT STATE	BOUNDARY
Operating history	VERIFY	Seek dated attributable reliability and operating-history records for the named system.
Replication	VERIFY	Seek field-operation records from additional independent operators.
Independent validation	VERIFY	Seek third-party evidence against defined performance and safety requirements.
Repeat procurement	VERIFY	Seek attributable repeat order or additional commissioned procurement.
Industry adoption	DO NOT INFER	Require multi-entity field evidence across a defined market boundary.

Recommended bounded action

If the immediate decision is whether one commercial field instance exists, stop: the accepted record answers that narrow question. If the decision is procurement, qualification, or broad market adoption, authorize only the specific missing evidence capable of changing that decision.

Evidence cut-off and revisions

This sample is frozen at 2026-09-20T10:46:47Z. No revision rounds are included. Evidence published later belongs to a separately purchased collection cycle. When a subsequent cycle is purchased, qualifying new evidence is incorporated and any superseded state is corrected within that new delivery.

COMMERCIAL BOUNDARY

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