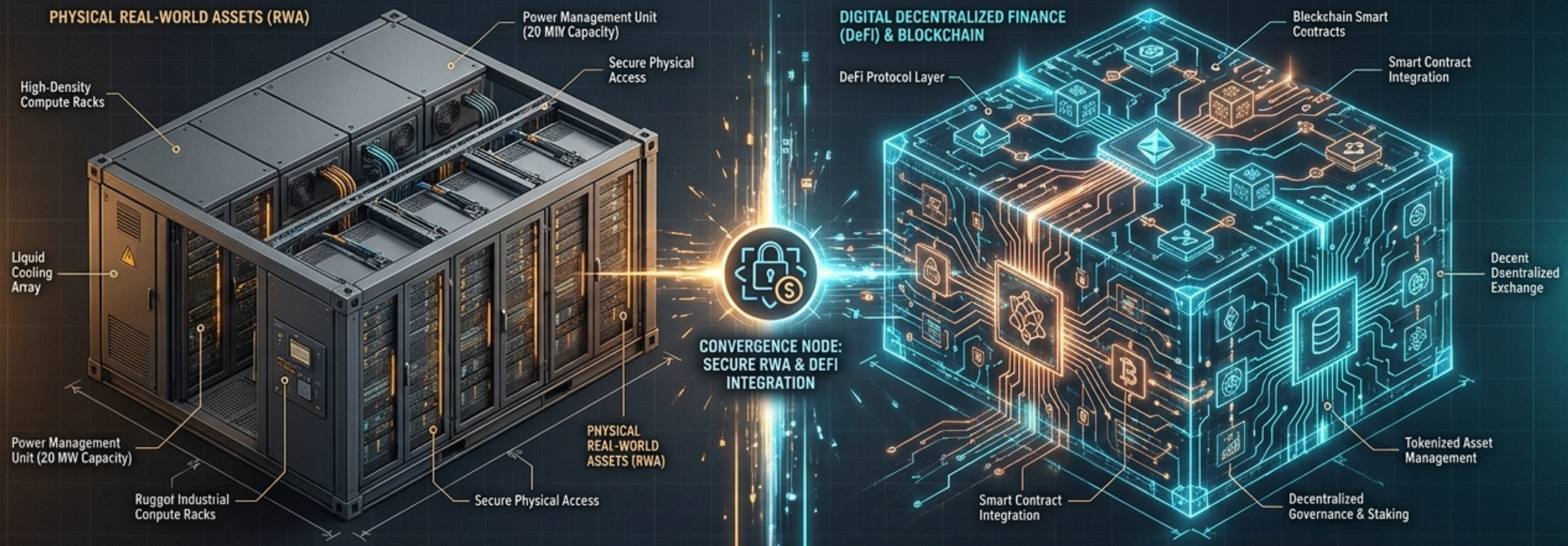
THE BARAK 20 MW DIGITAL INFRASTRUCTURE BLUEPRINT

FULL EXECUTION SEQUENCING FOR MODULAR EDGE AND DECENTRALIZED FINANCE CONVERGENCE



PHASE 1: PHYSICAL DEPLOYMENT & RWA OPTIMIZATION

- Modular Pod Fabrication
- Site Preparation & Installation
- Power & Cooling Commissioning
- Secure Connectivity Setup
- Liquid Cooling Array
- Secure Physical Analysics

PHASE 2: DIGITAL INTEGRATION & DEFI PROTOCOL ACTIVATION

- Smart Contract Deployment
- Asset Tokenization & Oracle Integration
- Liquidity Pool initialization
- Decentralized Governance Launch

BLUEPRINT ID: BRK-20MW-CVG-V1.0

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The Convergence of Gridlock



Traditional gigawatt-scale infrastructure can no longer physically or financially navigate the modern regulatory landscape.

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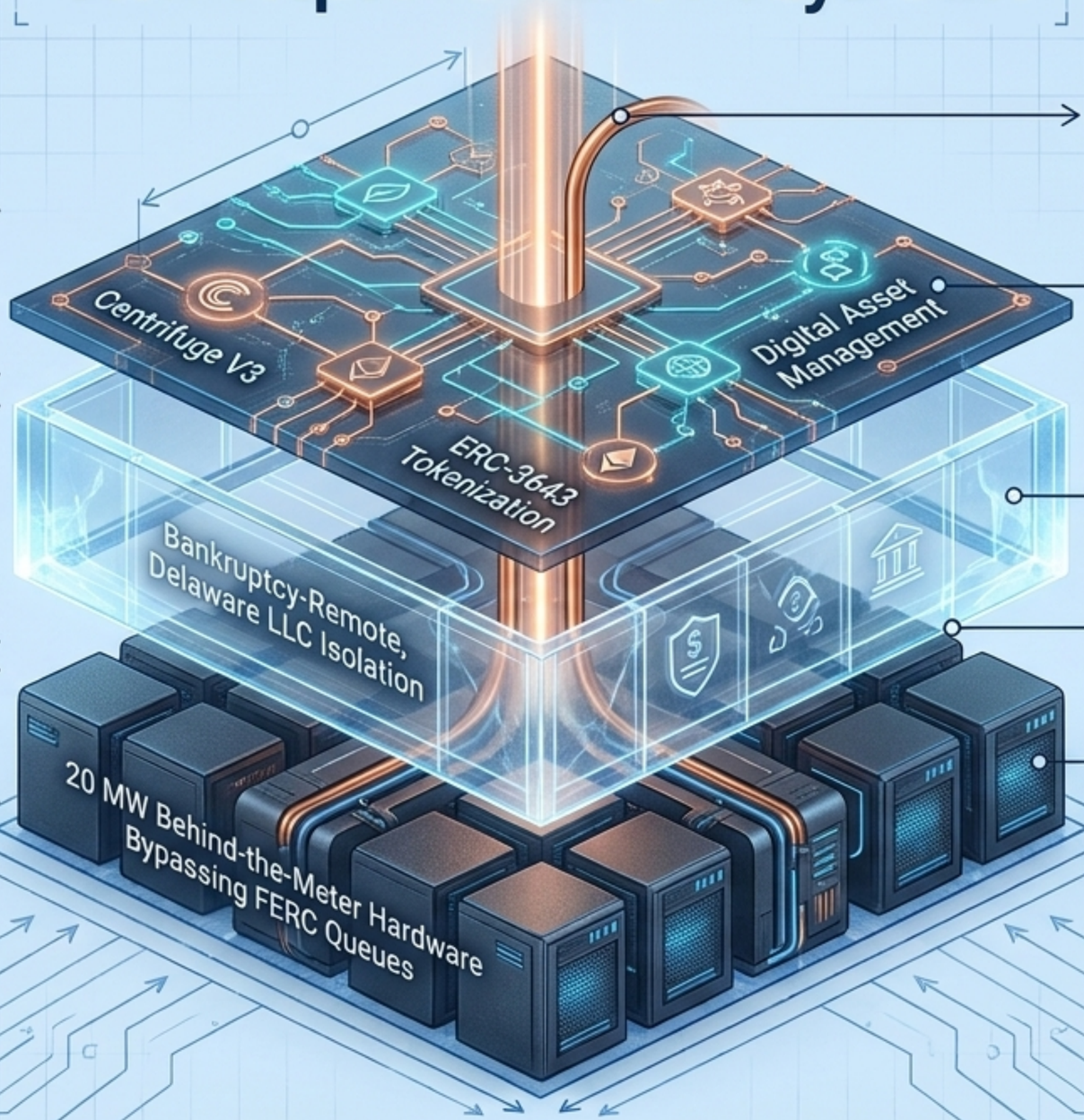
The Triple-Stack Playbook



Top Layer
Digital Protocol
3

Middle Layer
Legal SPE Structuring
2

Bottom Layer
Physical Modular Edge
1

5 Secondary Liquidity

4 ESG/SRECs

3 Smart Contracts

2 Capital Stack

1 Barak Anchor

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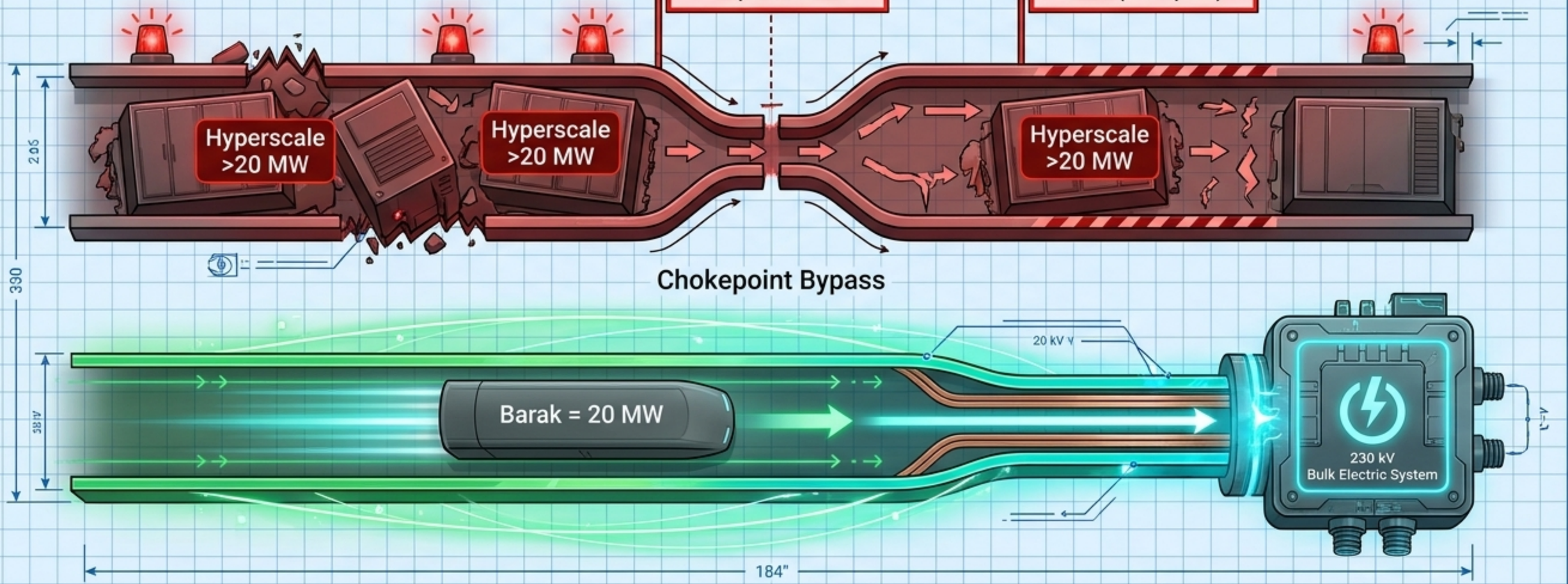
Phase 1: Threading the FERC Needle at 20 MW

By staying exactly at the 20 MW threshold, the asset isolates itself from federal FERC study backlogs, keeping interconnection under **agile, state-level EMC** jurisdiction.



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Jurisdictional Siting Matrix: The "Atlanta Ring" Strategy

County / Utility	Score	Highlights
Douglas County (GreyStone Power)		• 230 kV Substation connection • mature data center corridor • no referendum risk.
Jackson County (Jackson EMC)		• Pro-business but high land competition • 100% incremental grid cost shifting.
Coweta County (Project Sail)		• 900 MW / 300k gallon footprint has triggered aggressive local referendum threats, risking retroactive zoning revocation.

SB 476 Mitigation Strategy:
Douglas County local Industrial Development Authority property tax abatements offset the state-level SB 476 sales tax repeal.

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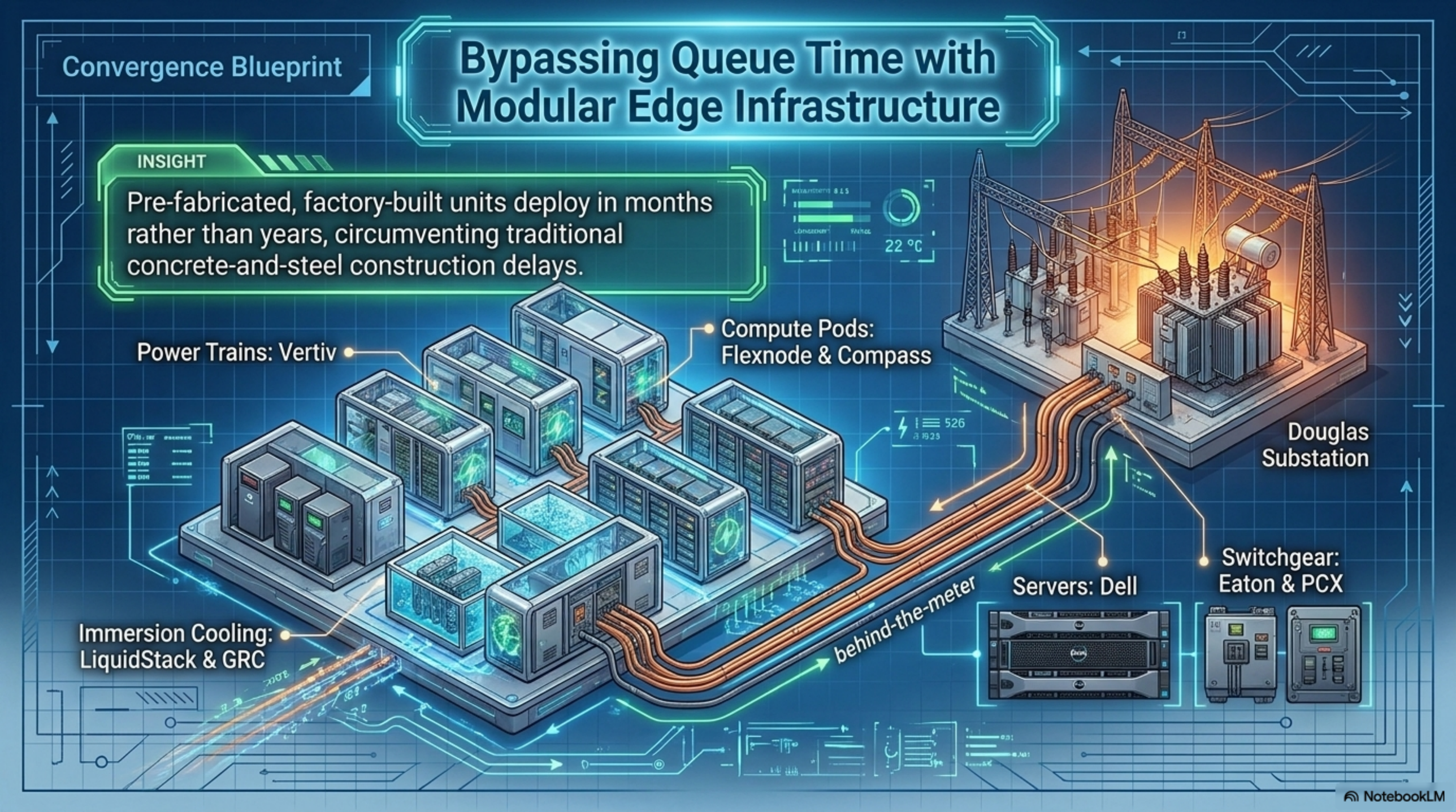
Bypassing Queue Time with Modular Edge Infrastructure

INSIGHT

Pre-fabricated, factory-built units deploy in months rather than years, circumventing traditional concrete-and-steel construction delays.



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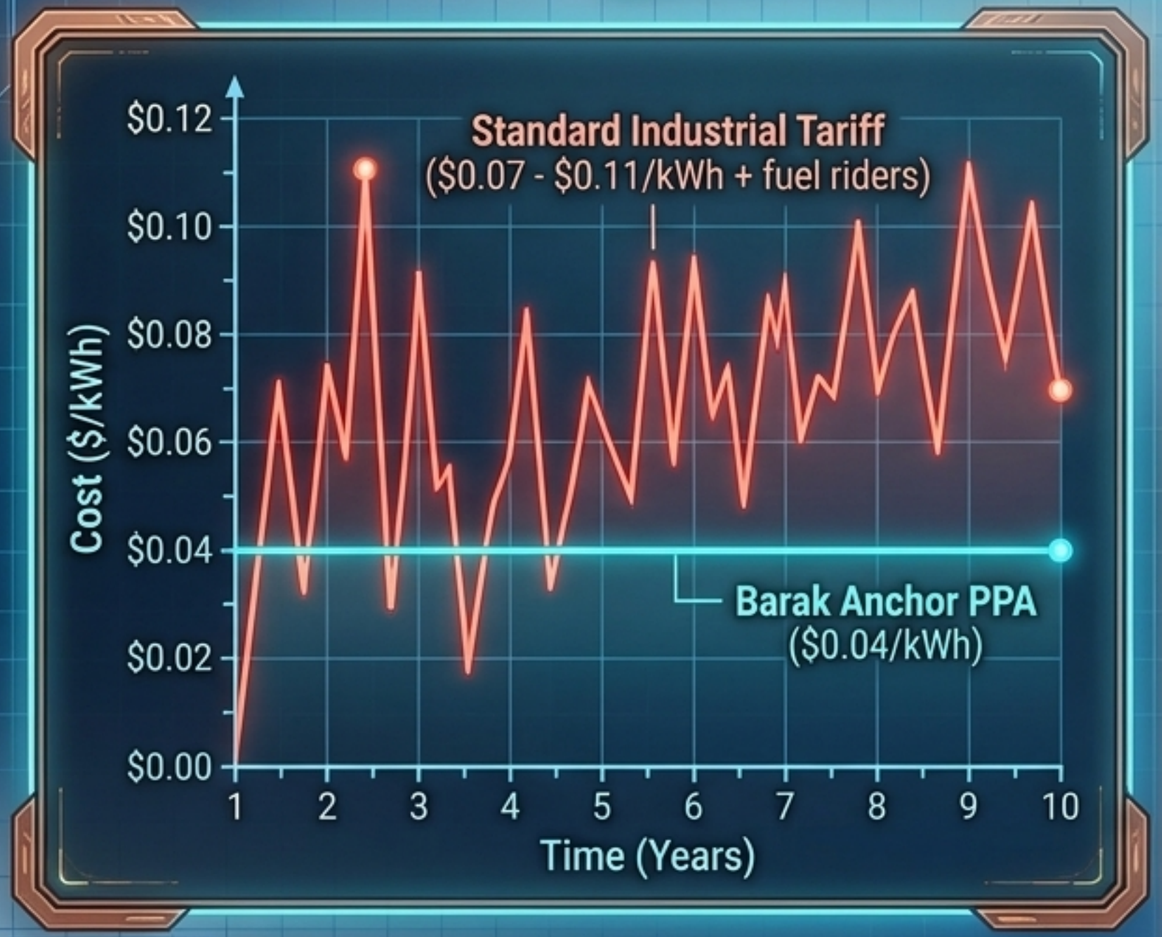
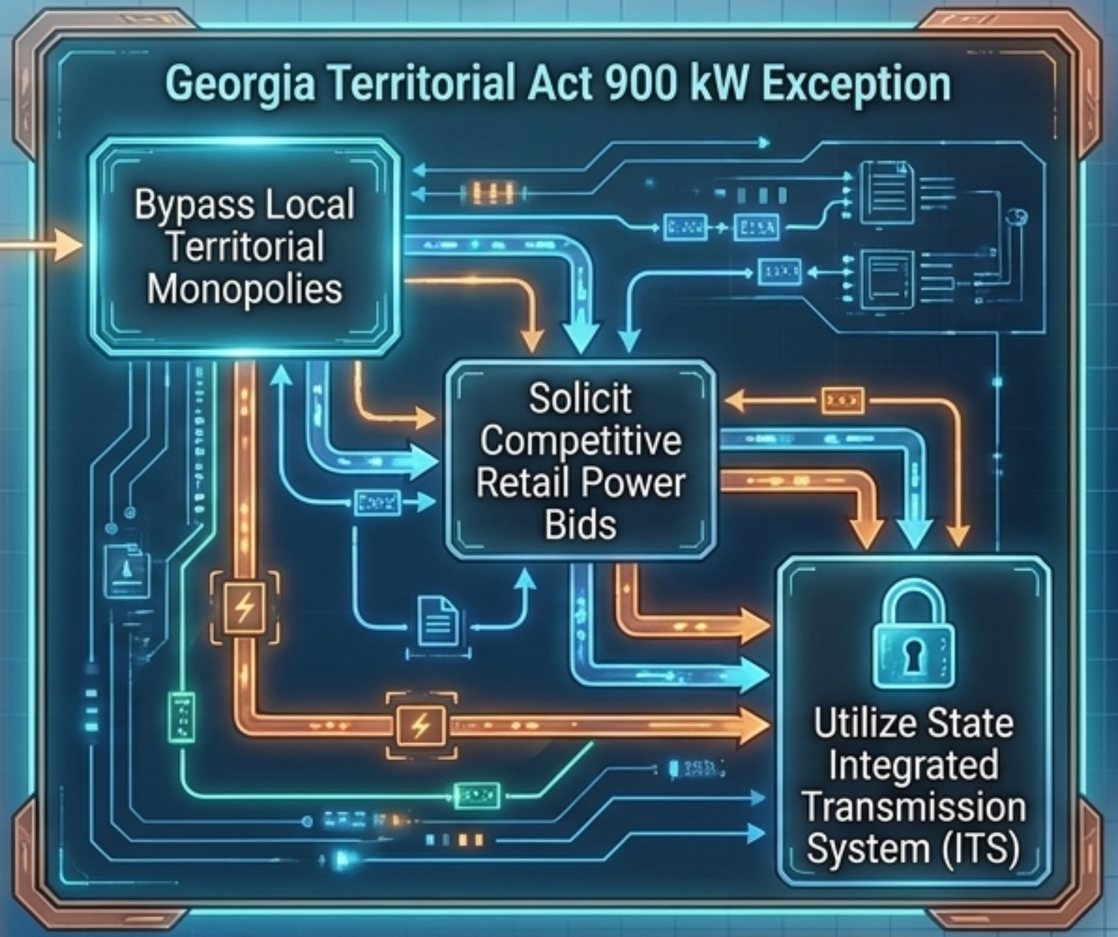
The Anchor PPA and Operational Cost Control



Stable Cost Certainty vs. Market Volatility



Operational mechanism enabling the Barak Anchor PPA's stable pricing.

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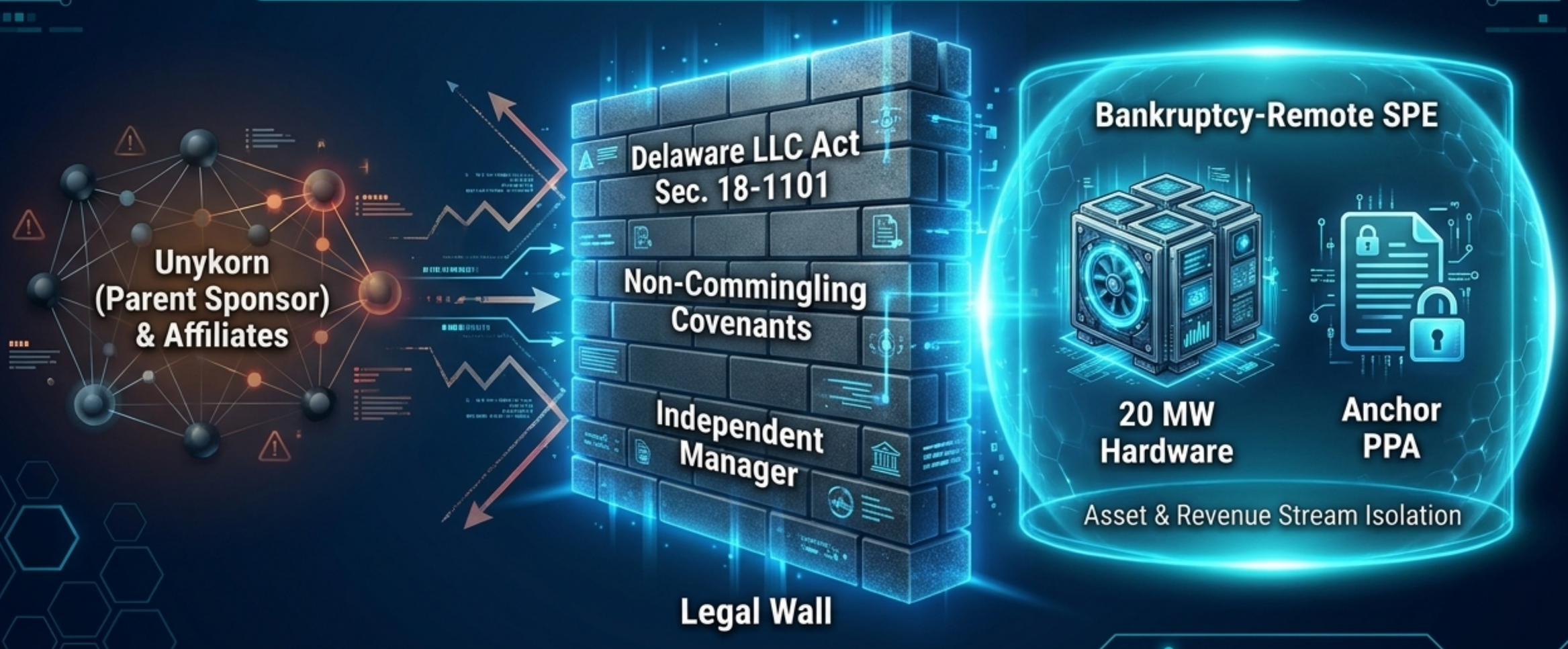
Phase 2: The Structural Fortress

INSIGHT

The parent company's financial distress cannot trigger a bankruptcy at the **SPE level**, **ensuring the physical assets are perfectly isolated** for tokenized investors.



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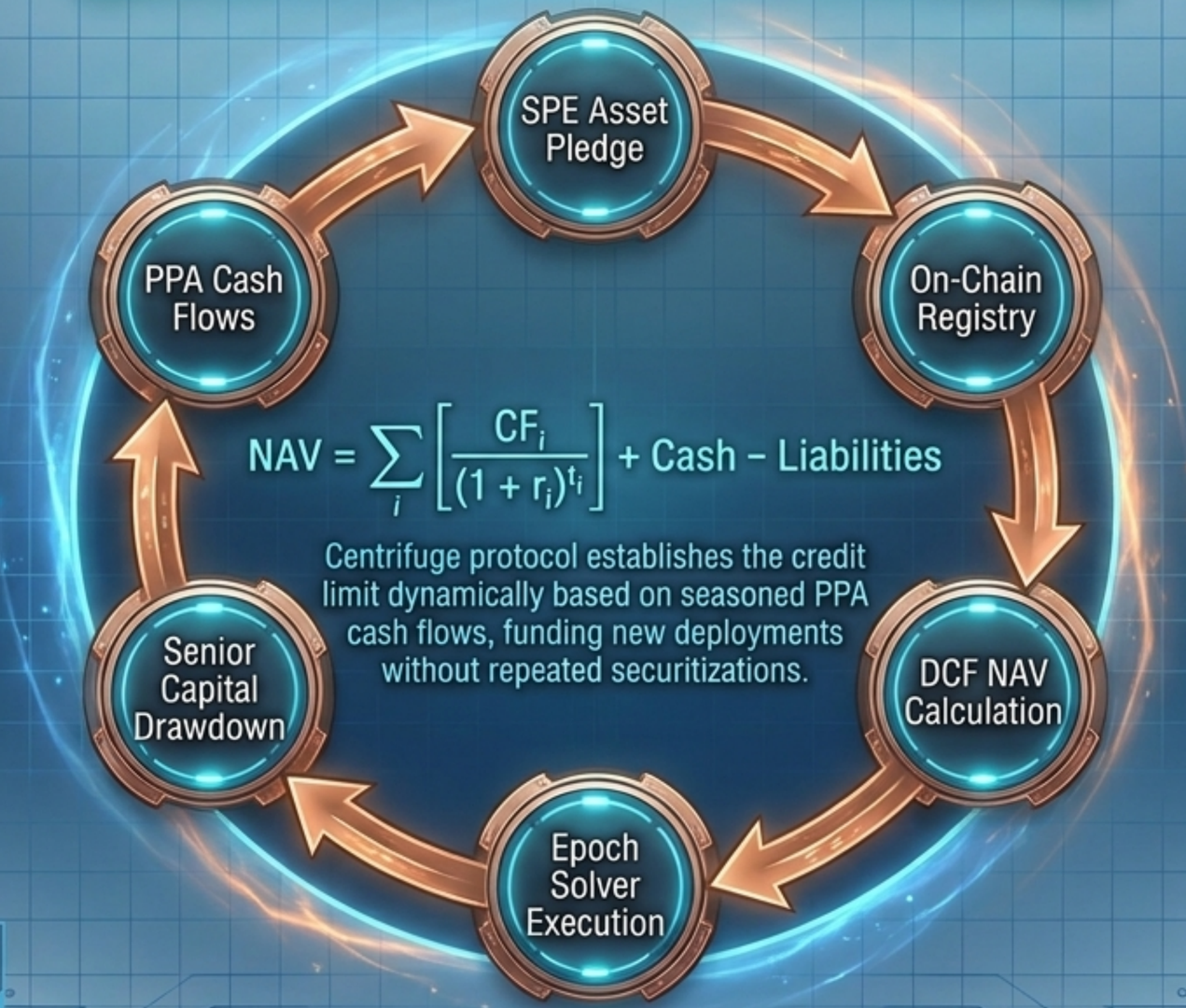
Sizing the Capital Stack: The Revolving Warehouse Facility



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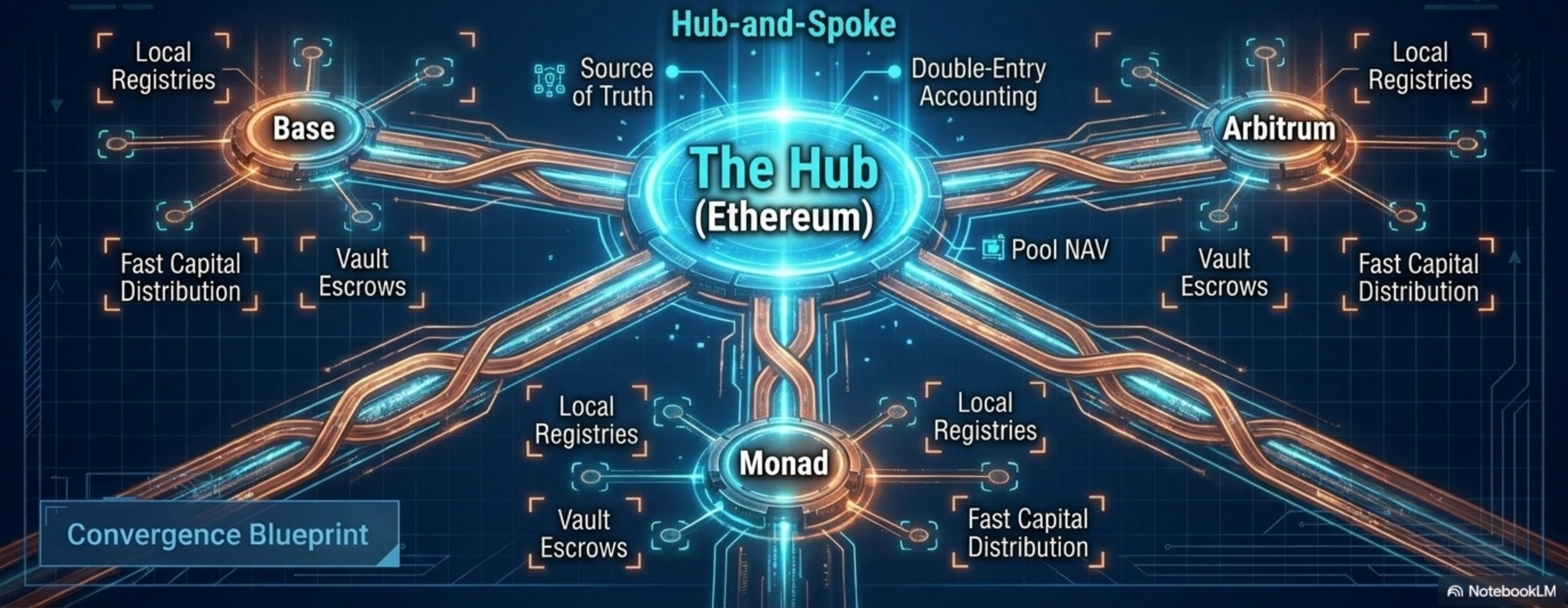
Phase 3: The FTH Engine and Protocol Orchestration

INSIGHT

Moving beyond single-chain silos, synchronized multi-chain liquidity **maintains a single, legally binding source of truth** on the Ethereum mainnet.



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Token Standard Compliance Matrix

ERC-20 (Standard Fungible)	ERC-7540 (Asynchronous Vaults)	ERC-3643 (Identity & Compliance)
Fast but lacks compliance hooks. Cannot handle asynchronous debt settlement.	Required for handling real-world debt where deposits/redemptions require operator review or queue-based matching against delayed PPA cash flows.	Required for Rule 144 compliance, jurisdictional blocking, and identity verification. Shifts compliance from trust to hardcoded cryptographic proof.







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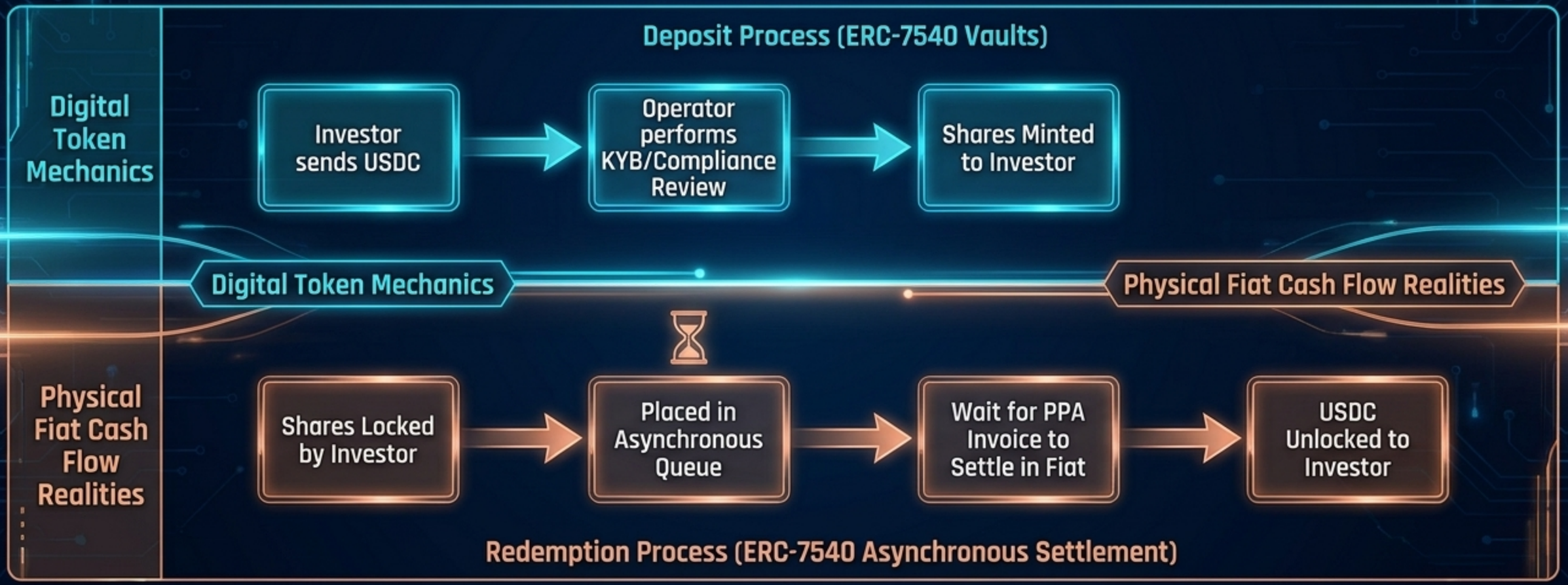
Managing Debt Queues with ERC-7540 Asynchronous Settlement

Standard ERC-4626 assumes instant liquidity. ERC-7540 perfectly mirrors the delayed, cash-flow-dependent reality of physical infrastructure financing.



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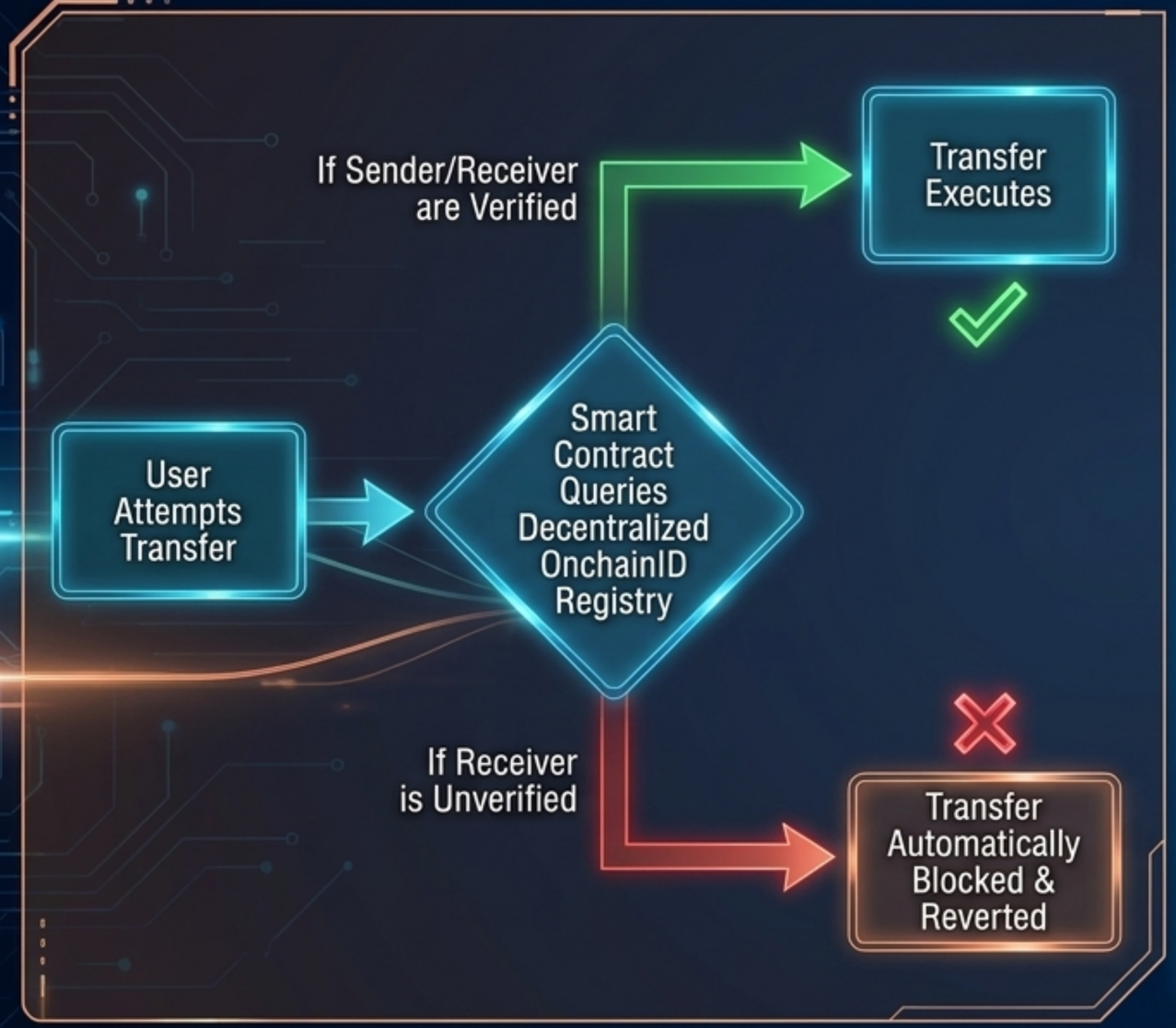
Hardcoding SEC Rule 144 Compliance via ERC-3643

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2026-01-12T15:04:38Z [USER LOG] msg='Receiver address validated' 0x0000000000000000000000000000001
2026-01-12T15:04:38Z [USER LOG] msg='Step 2a: Checking receiver compliance with Identity Registry...'
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2026-01-12T15:04:38Z [USER LOG] msg='Creating Identity Registry contract binding' registryAddress=0x8x38d4f2bcc23d
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2026-01-12T15:04:38Z [USER LOG] msg='Calling isVerified() on Identity Registry...'
2026-01-12T15:04:39Z [USER LOG] msg='Awaiting isVerified() response...'
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2026-01-12T15:04:39Z [USER LOG] msg='❌ COMPLIANCE CHECK FAILED: Receiver is not verified in Identity Registry"
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00001
```

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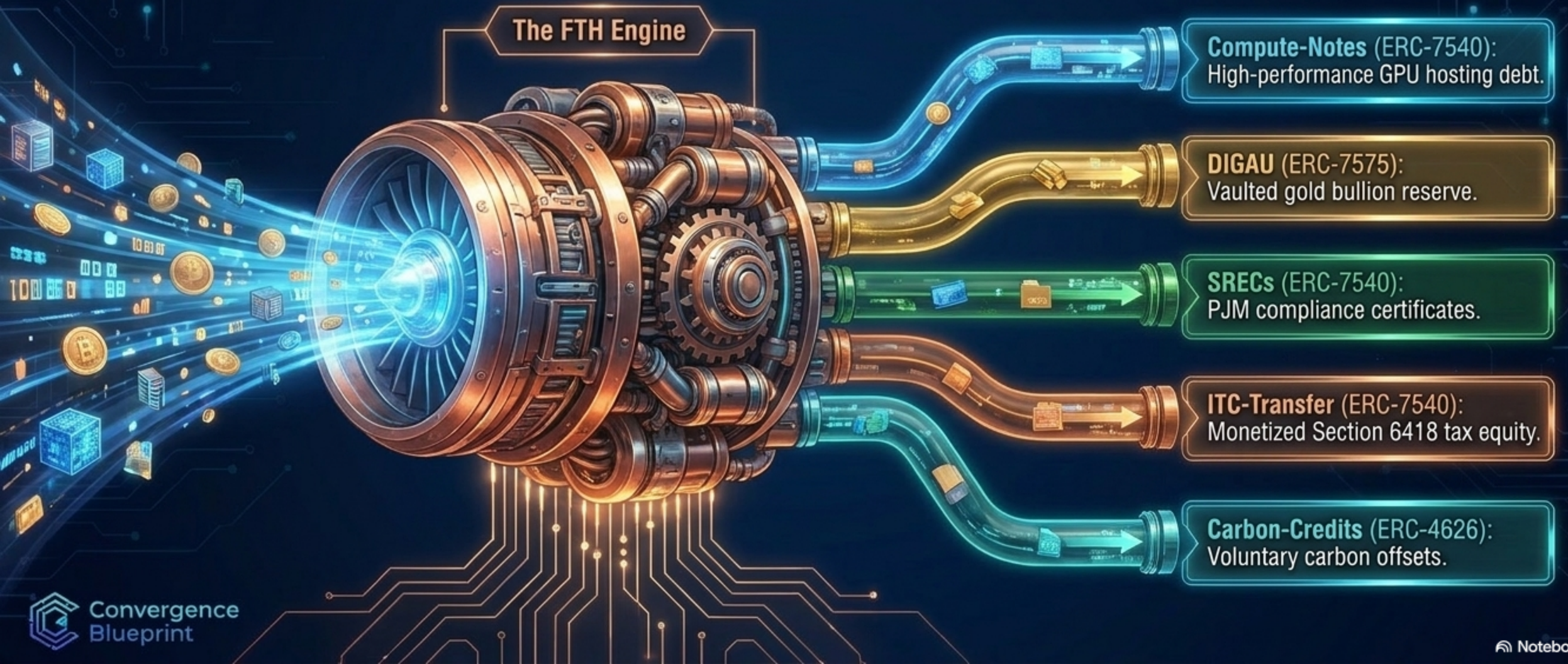
The 5-Channel FTH Capital Engine

The unified architectural stack digests capital seamlessly across entirely distinct asset classes.



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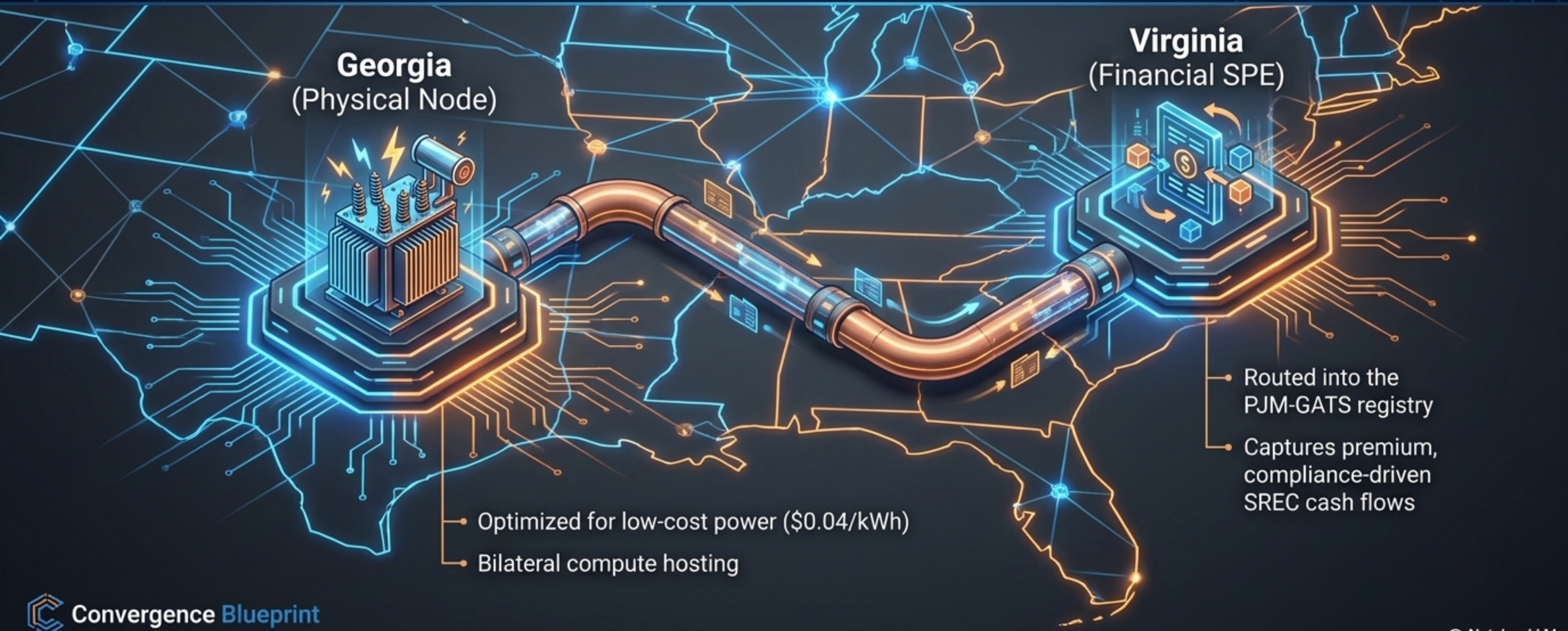
Phase 4: Environmental Alpha via the Split-Site SREC Strategy

Separating the physical compute location from the financial compliance entity maximizes the value of the environmental attributes.



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Tokenized Carbon Retirement & ITC Tax Equity

Real-Time Carbon Execution



Section 6418 ITC Transferability



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Phase 5: The Liquidity Paradox & deRWA Wrappers



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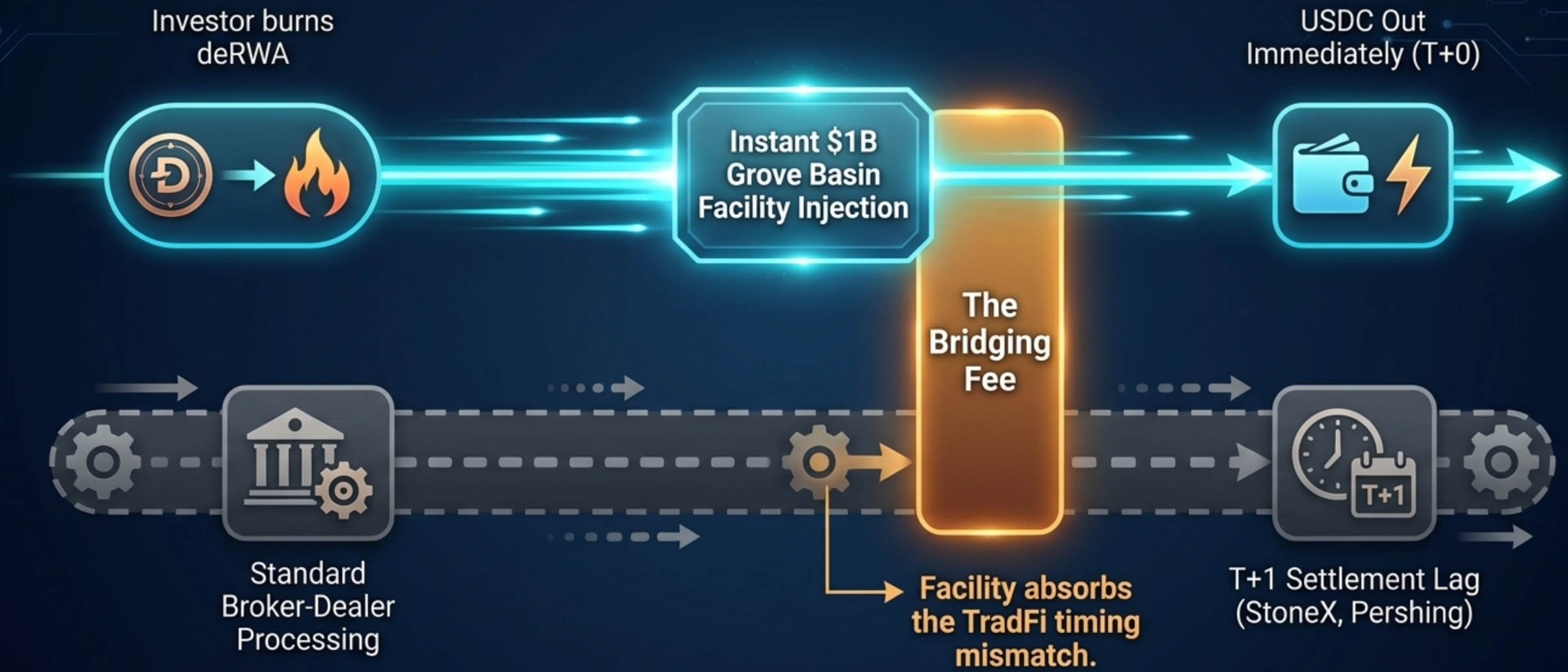
Resolving Settlement Lag: The Grove Basin Bridge



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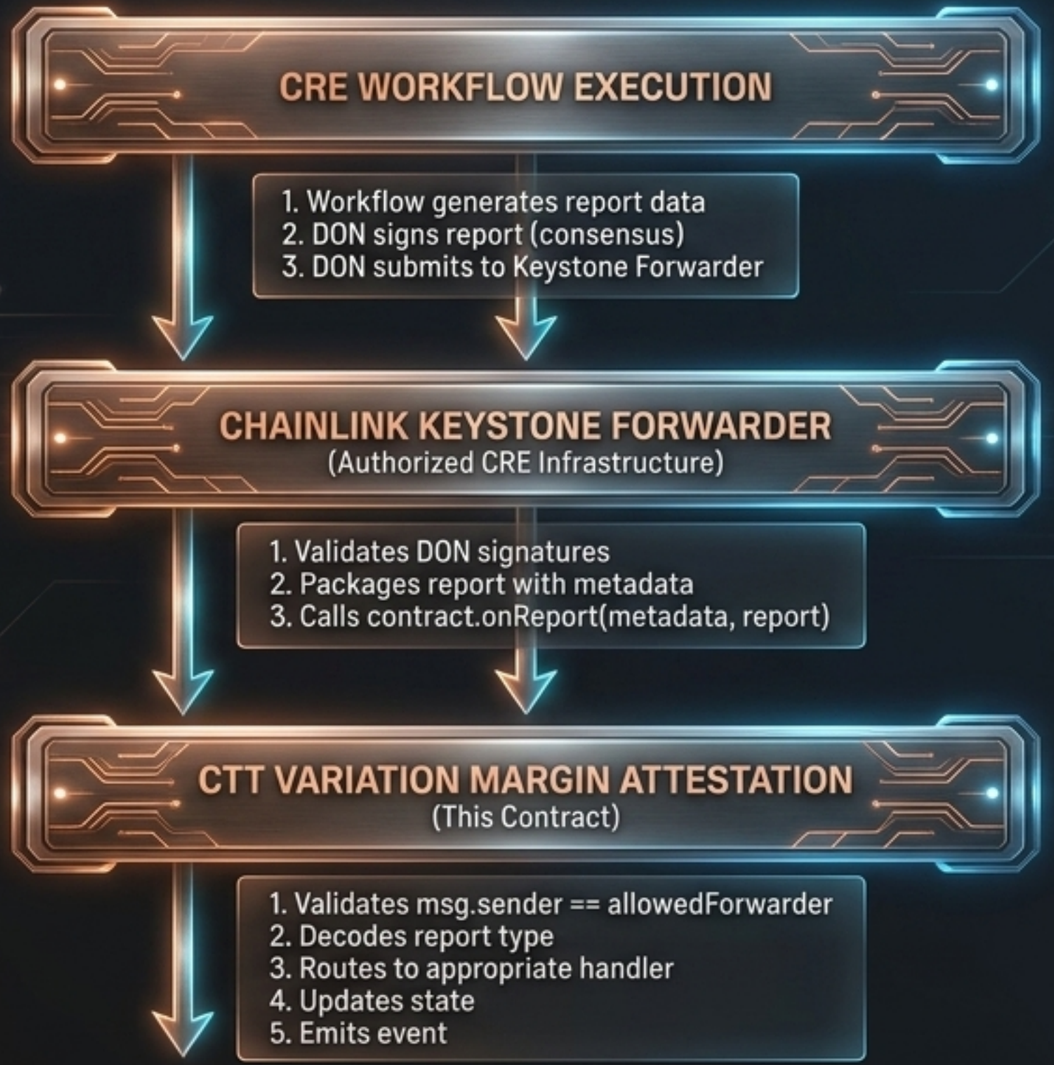
ERC-3643 as Institutional OTC Collateral

Smart contracts natively enforce CSA margin requirements, transaction limits, and holding periods without exposing counterparties to manual transfer errors.



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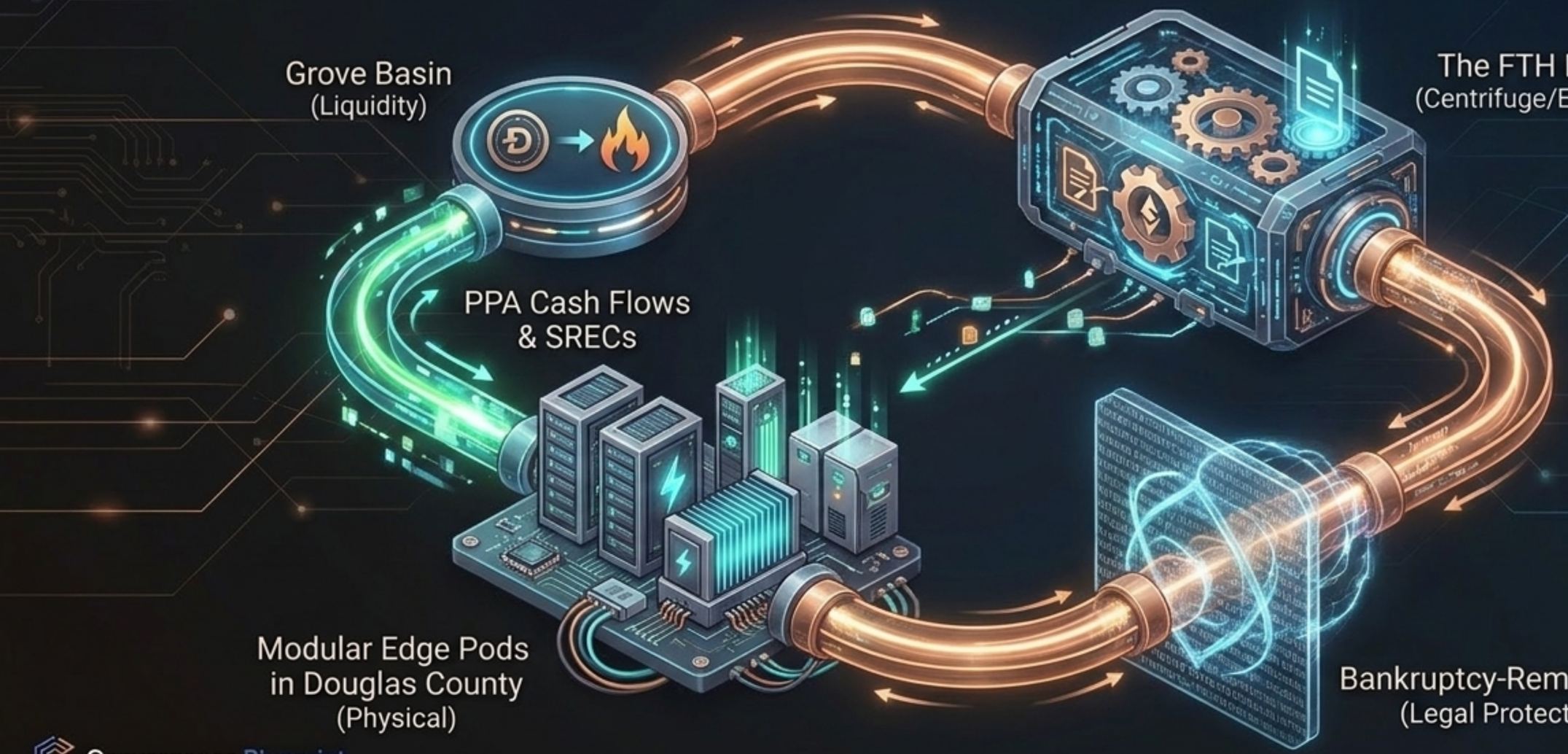
Synthesis: The Unified Convergence Blueprint

Insight: A perfectly closed-loop system where physical infrastructure and decentralized capital operate as a single, frictionless machine.



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Strategic Recommendations & Execution Mandate

1. Modular Rollout

Accelerate Vertiv/LiquidStack deployment to bypass the FERC chokepoint and beat the 2027 placed-in-service sunset window.

2. Split-Site Optimization

Execute the legal bifurcation between GA physical asset ownership and VA-based PJM-GATS compliance.

3. Standardize deRWA

Wrap all seasoned ERC-7540 debt notes to unlock active collateralization.

4. Zero-Balance Posture

Ensure the Unykorn orchestration node maintains strict legal separation, holding no custody of assets, routing all capital directly to the SPEs.

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