Alchemy Chain

ALCHEMY CHAIN WHITE PAPER

Alchemy Chain V2 - Instant Web3 Payments with Seamless Fiat Connectivity

Abstract

Alchemy Chain is a Web3-native payments L1 blockchain built for instant, low-cost stablecoin transactions across multiple fiat currencies. Built on PoA for low-latency deterministic finality and pre-configured ACH-denominated fees, it targets wallet-to-wallet transfers, remittances, Dapp commerce, merchant acquiring and checkout, and automated payouts with near-instant finality and predictable fees.
Alchemy Chain seamlessly leverages integrations with regulated partners to enable smooth stablecoin-fiat conversion, KYC/AML compliance, and direct integrations with banks, PSPs, and wallets. The result is a unified, compliant payments rail for Web3 and global commerce, optimized for speed, reliability, and interoperability.

1 Background and Motivation

1.1 The problem

Public blockchains were not built for mainstream payments—fees are volatile, congestion creates gas wars, transaction settlement isn't always certain, and enterprise-grade controls for stablecoins and RWAs are fragmented.

1.2 Our insight

Payments need predictable costs, instant finality, clean developer primitives, compliance controls, and direct fiat connectivity to onboard users and merchants globally.

1.3 Our advantage

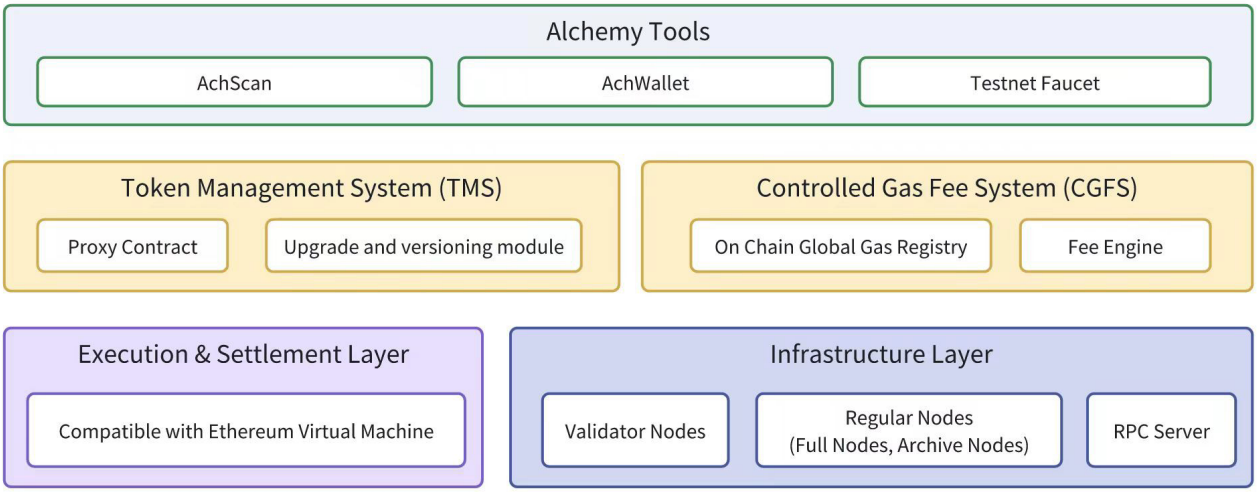
The network is designed to integrate with multiple third-party fiat rails (cards, bank transfers, local wallets) via regulated payment providers, enabling broad geographic coverage depending on partner availability.

2 Design Principles

· Payments-first: Instant, deterministic settlement and a consistent experience without gas bidding or fee volatility.
· Token-native: Purpose-built to issue, manage, and transact stablecoins and RWAs with enterprise controls, while keeping user experience compatible with mainstream EVM tooling.
· Predictable fees (ACH-denominated and ACH-settled): Fees are pre-configured in ACH via the Global Gas Registry and fixed at execution time by on-chain rules. Transaction fees are settled by deducting ACH from the user's canonical ACH token balance on Alchemy Chain (including ACH bridged from Ethereum), rather than charging the chain's native coin.

· Compliance: KYB for onboarding, Issuer-grade token controls, policy APIs, and auditable event trails.
· Interoperable and fiat-connected: Canonical bridges and cross-chain connectivity to major ecosystems, plus direct on/off-ramps for users and merchants through integrated, regulated payment providers and banking/PSP partners.

3 Core Architecture



3.1 Execution Environment and Roles

Alchemy Chain is EVM-compatible for developer familiarity and ecosystem interoperability.

3.1.1 Validators/Executor node

Payments need predictable costs, instant finality, clean developer primitives, compliance controls, and direct fiat connectivity to onboard users and merchants globally.

3.1.2 Regular Nodes

Maintain chain state; provide data availability and indexing; support fast sync for new nodes; do not participate in block signing/consensus.

3.1.3 RPC Servers

Expose JSON-RPC for wallets, merchants, and apps, and host the TMS API for issuers; relay transactions to executors, return receipts/logs, serve historical queries, and surface fee quotes from the Global Gas Registry.

3.1.4 ACH Operator wallet(s)

Govern fee schedules and update the Global Gas Registry.

3.1.5 Token Issuers/Partners

Use TMS APIs and contracts for issuance, lifecycle, and compliance (mint/burn, freeze, blacklist).

3.1.6 Users/Wallets

Initiate payments, swaps, and cross-chain transfers via wallets and merchant apps; view ACH fees pre-transaction; benefit from gas sponsorship, refunds/disputes.

3.2 Proof-of-Authority (PoA) consensus and finality

3.2.1 Validators and Consensus Protocol

Validator nodes participate in a Proof-of-Authority (PoA) consensus protocol designed for low-latency, high-throughput payment workloads. The protocol targets a block time of 5 seconds and an end-to-end finality latency of under 10 seconds, measured from transaction submission to inclusion in a finalized block.

At a high level:
· **Block proposal and rotation**: A set of authorized signers are selected to create new blocks in a round-robin fashion. Each signer is allowed to create a block within a specific time frame, with block creation time being fixed. To prevent racing when multiple validators are eligible to mint, each signer adds a small random time offset before releasing their block.
· **In-turn/out-of-turn difficulty weighting**: The in-turn signer for a given block height is deterministic, but out-of-turn signers may also propose blocks. In-turn blocks carry difficulty, while out-of-turn blocks carry difficulty. Nodes follow the chain with the highest total difficulty, naturally biasing toward the canonical proposer's chain.
· **Signing frequency limits**: To prevent malicious signers from causing damage, any signer may only mint 1 block out of every K blocks. Additionally, the minting frequency is restricted to 1 out of N/2 to ensure malicious signers would need to control at least 51% of signing accounts to successfully censor the chain.
· **Identity-bound security without stake slashing**: Validators are permissioned and identity-bound under payments industry regulatory standards rather than economically pseudonymous. Misbehavior is detectable via signed block headers and consensus messages, and can be addressed both off-chain (through contractual and regulatory enforcement applicable to licensed payment institutions) and on-chain (through governance processes that update the validator set to remove offending signers).
· **Signer set governance via voting**: The authorized signer set can be modified through votes embedded in block headers. Signers are added or removed based on votes reaching a certain threshold (SIGNER_LIMIT). A moving window of W blocks (typically 1-2 epochs) is used to expire stale votes and prevent spam attacks.

The consensus layer is integrated with our payment-specific components:
· **The Controlled Gas Fee System (CGFS)**, so validators deterministically compute ACH-denominated fees using the on-chain Global Gas Registry at block execution time; and
· **The Token Management System (TMS)** primitives, so token-level controls (e.g., freeze/blacklist actions) are applied consistently and atomically within finalized blocks.
These design choices provide:
· Rapid practical finality via fast block times and deterministic proposer rotation, enabling payment flows with low-latency settlement.
· A stable performance envelope, via bounded block times and predictable proposer scheduling, suitable for high-volume payments, swaps, and cross-chain flows. The in-turn/out-of-turn mechanism ensures block production continues even when individual signers are temporarily unavailable.

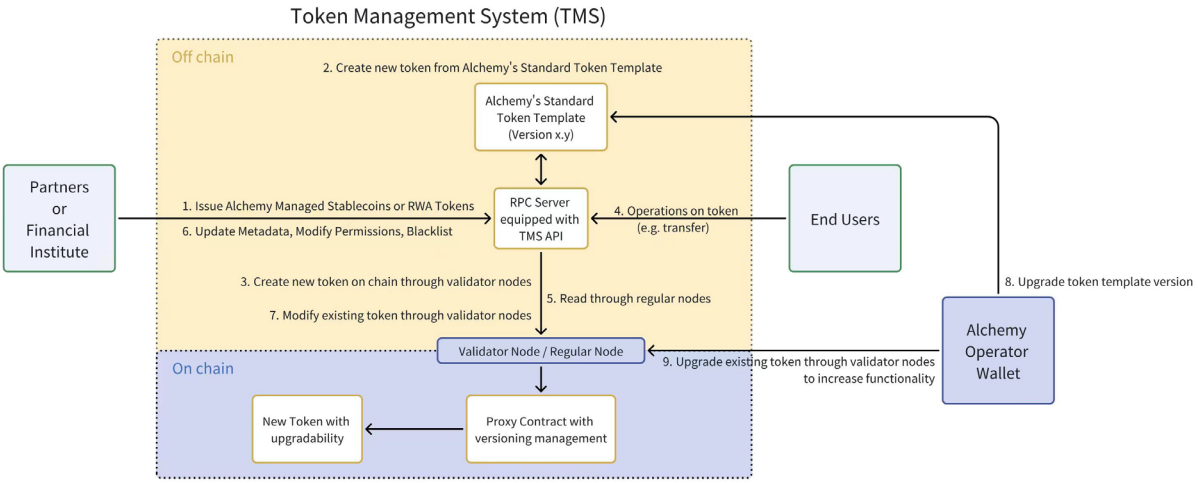
· Strong auditability, as all blocks carry cryptographic signatures from authorized signers, and consensus relevant headers, voting records, and state transitions can be reconstructed or verified from on-chain data, supporting forensic analysis, SLA verification, and regulatory audits.

3.2.2 Governance and Operator Model

Alchemy Chain adopts PoA with a permissioned validator set operated by a permissioned consortium of qualified institutional operators and ecosystem partners. This governance and operator model trades off fully open validator participation in exchange for:
· Deterministic finality and enforceable SLAs required by payment processors and merchants
· Strong real-world accountability of validators under contractual and regulatory regimes
· Native integration with compliance workflows, including KYC/KYB, AML monitoring, and dispute / refund handling
· In practice, Alchemy Chain is not a censorship resistance maximized settlement layer, but a payments grade, regulated infrastructure optimized for real-world commerce.

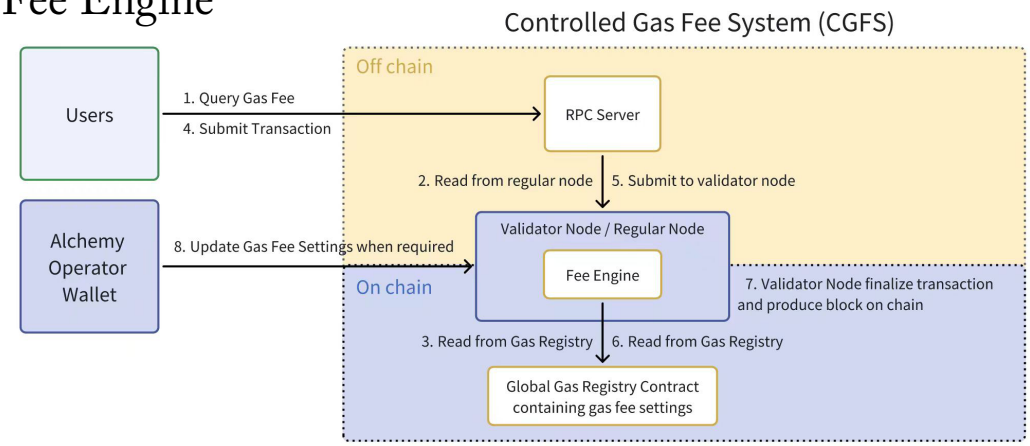
To mitigate centralization risk:
· The validator set is geographically and institutionally diversified.
· All validator actions and protocol level changes are fully auditable on-chain.
· Governance over key parameters (e.g., validator membership, gas schedules, critical contract upgrades) is executed through on-chain multisignature contracts controlled by a designated governance multisig / foundation / operator committee, with transparent change logs and clearly defined operational policies.

3.3 Token Management System (TMS)



The Token Management System (TMS) is an API-driven issuance and lifecycle management suite. Alchemy's Partners and financial institutions use our off-chain TMS API to create and manage compliant stablecoins and RWA tokens that benefit from ongoing function upgrades and maintenance.
The TMS deploys and updates these managed tokens onchain via validator/regular nodes, while end users interact with them as normal blockchain assets (transfer, approve, etc.).
Alchemy operators upgrade token templates and propagate those improvements to existing tokens through a proxy/versioning pattern, issuers get continuous security, feature, and compliance enhancements.

3.4 Controlled Gas Fee System (CGFS) : Global Gas Registry & Fee Engine



The Controlled Gas Fee System (CGFS) replaces gas markets with a rules-based Global Gas Registry that sets fixed ACH fees per transaction. This eliminates gas wars and provides predictable transaction costs.
For Example:

1. A merchant in Tier A pays 0.3 ACH per transaction.
2. A loyalty user with gas sponsorship pays 0.2 ACH.
3. A promotional stablecoin campaign reduces fees to 0.1 ACH for transfers involving that token.

The system is built around a Global Gas Registry, an onchain contract that stores all gas fee schedules and rules. When users query gas fees via the RPC server, validator/regular nodes run a built-in fee engine that reads the latest settings from the Global Gas Registry and returns a fixed ACH fee. This fee is settled by deducting ACH from the sender's ACH token balance on Alchemy Chain (rather than charging the native coin).
The gas fee is configurable per merchant (for partnerships), per user (to support loyalty tiers, subsidies), and per stablecoin (for promotions and events). When a transaction is submitted, the RPC server forwards it to validator nodes, which again consult the registry, apply the fee engine, and finalize the exact ACH fee of the transaction as part of block production, with no gas bidding or priority auctions. Operator wallets can update gas fee schedules onchain whenever needed, and these changes are immediately reflected in subsequent fee queries and executions. This architecture delivers predictable, pre-communicated ACH fees for merchants and users, and enables business flexibility such as partner gas sponsorship or batched fee settlement. For each transaction, the ACH fee is fixed at execution time based on pre-configured rules in the Global Gas Registry, providing a consistent ACH per-transaction model across payments, swaps, and cross-chain flows.

3.4.1 ACH-Settled Gas Fees (Token-Based Fee Deduction)

Alchemy Chain is designed so users pay network fees directly in ACH held on Alchemy Chain (including ACH bridged from Ethereum), instead of paying gas in the chain's native coin. While the Global Gas Registry defines fixed, predictable fees denominated in ACH, the fee settlement mechanism deducts the corresponding amount from the sender's ACH token balance on Alchemy Chain and credits it to a designated fee-collection address for recycling and operations. The chain's native coin is not exposed as a user-facing asset and is not intended to circulate.
To preserve compatibility with popular EVM wallets and standard transaction submission flows, Alchemy Chain adapts the EVM balance accounting used during gas fee charging. Concretely, the runtime implementations of GetBalance and AddBalance/SubBalance are redirected from the native coin ledger to the canonical ACH token ledger on Alchemy Chain. As a result, wallets can continue using familiar EVM transaction flows, while the protocol charges and settles fees in ACH token units under the same deterministic CGFS rules.

This design unifies gas fee settlement into a single token (ACH), so users do not need to acquire a separate native gas coin. Users can hold and transfer stablecoins and other supported assets for payments and value transfer, while network fees are denominated and settled in ACH (deducted from the user's ACH balance) for transfers and smart contract interactions.

3.5 Security and Compliance

KYC/KYB is supported via integrated identity/compliance providers for onboarding merchants and partners, and a token blacklist function is enforced at the protocol level. All operations, including historical gas fee updates, are immutably recorded on-chain. AML monitoring, investigations, reporting, and audit support are handled via partner compliance systems and operational processes, with on-chain logs mapped into off-chain controls.

4 ACH Token

4.1 Strategic Context: Why Alchemy Chain Is Necessary

Alchemy Pay has evolved from a payment gateway into a global payment network. As transaction volume, settlement complexity, and compliance requirements scale globally, relying on fragmented external infrastructure becomes increasingly inefficient and restrictive.

To support long-term growth, Alchemy Pay requires a dedicated, protocol-based settlement layer that can provide predictable performance, integrated compliance primitives, and native economic coordination across validators, merchants, developers, and partners. Alchemy Chain serves as the foundation of this full-stack payment ecosystem.

This foundation will also enable the development of a unified payment ecosystem while also paving the way for future stablecoin issuance. By providing a blockchain optimized for stablecoin assets, Alchemy Chain is moving beyond simple gateway services to build a global financial layer. This vision transforms the global payment landscape into a borderless stablecoin payment ecosystem, connecting traditional finance with a future where stablecoins are the primary vehicle for global commerce, wealth preservation, and institutional settlement.

The expansion of ACH supply is therefore not a discretionary monetary action, but a strategic investment mechanism required to bootstrap and sustain a global payment network. Issuance enables the network to:

· Secure protocol operations through validator and infrastructure incentives
· Coordinate economic behavior across on-chain payment flows
· Attract developers and partners to build payment-native applications
· Transition Alchemy Pay from a service provider into a self-sustaining, protocol-driven financial platform

Note on Network Design: Alchemy Chain prioritizes reliability, compliance, and economic coordination. While the network is protocol-based and validator-secured, certain components may operate under permissioned or governance-controlled models to support regulated payment use cases.

4.2 ACH Utility

ACH is the native token of Alchemy Chain and functions as the core economic and security asset of the network. Its primary utilities include:

· **Gas and Transaction Fees**: ACH is used to pay gas and on-chain transaction fees across Alchemy Chain.
· **Incentives**: (1) ACH incentivizes validators and infrastructure providers, ensuring network security and operational stability. (2) ACH supports payment settlement, merchant rewards, and incentive programs across on-chain payment scenarios.
· **Governance**: ACH enables governance participation, including decisions related to protocol upgrades and economic parameters.

· **Collateral and Liquidity**: ACH serves as collateral for staking, liquidity provisioning, and other financial primitives within the ecosystem.
Closed-Loop Value Cycle:
Ecosystem Investment (Issuance) → Network Usage → Protocol Revenue → Automated Buybacks → Reduced Net Supply Growth
Through this cycle, ACH evolves from a utility token into a value-accruing network asset directly linked to Alchemy Chain adoption.

4.3 Issuance Strategy: Investment for Sustainable Growth

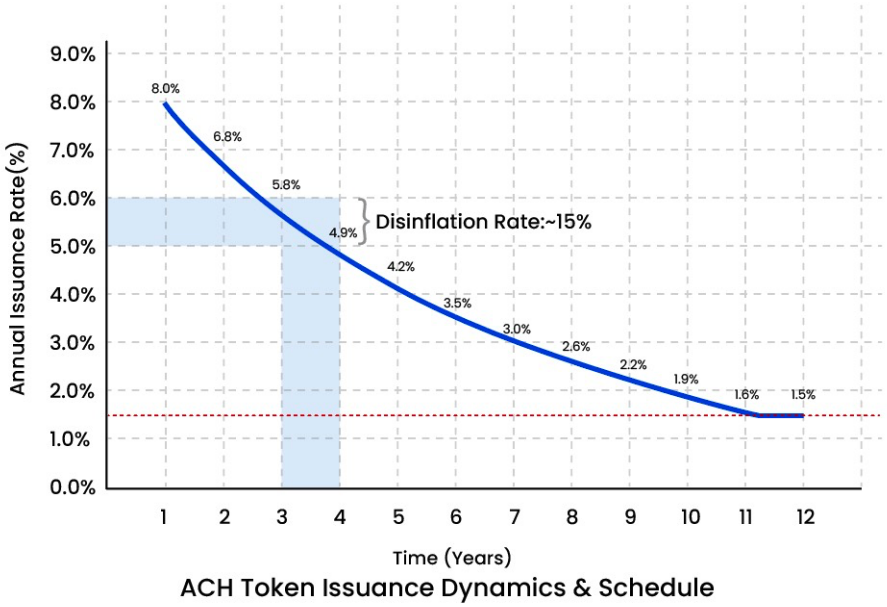
4.3.1 Monetary Design Principles

· **Issuance Framework**: Issuance follows a predefined framework designed to provide clear reference points around future supply dynamics, with key parameters established in advance.
· **Value Capture**: Issuance is paired with revenue-driven buybacks to manage net supply growth and align token value with network performance.
· **Long-Term Value Maximization**: ACH supply dynamics are structured to evolve with network adoption, gradually shifting from growth-focused issuance toward tighter supply conditions over time.

4.3.2 Issuance Dynamics (Adaptive and Declining Over Time)

ACH adopts an adaptive issuance model designed to support early network growth while maintaining long-term discipline and transitioning toward a low-inflation model.
By simulating various growth scenarios, Alchemy Pay has established three core parameters to define the token's supply dynamics: (Actual parameters are expected to remain aligned with network ranges at comparable stages)
· **Initial Inflation Rate** (~8.0%): The starting annual issuance rate, specifically to bootstrap the Alchemy Chain ecosystem. This provides the "economic energy" required to attract validators and secure the network during its critical first year.
· **Disinflation Rate** (~15.0%): This is the annual rate at which the inflation percentage decreases. It ensures a smooth but aggressive reduction in new token supply, forcing the network to transition from issuance-based rewards to revenue-based sustainability.
· **Long-term Inflation Rate** (~1.5%): The terminal floor. Following the annual decay, the issuance rate reaches this 1.5% baseline by Year 12. This floor is designed to provide a stable security budget for the Alchemy Chain network, balanced by the protocol's buyback mechanisms.

Using these parameters to explore the supply expansion over time, the schedule reveals a transition from an aggressive growth phase to a mature state:



ACH Token Issuance Dynamics & Schedule

4.3.3 Allocation Framework (Use-of-Funds Discipline)

Newly issued ACH is allocated across predefined categories designed to support long-term network sustainability. Strategic reserves are subject to strict governance constraints, disclosure requirements, and time-lock mechanisms.

· **Security / Node Incentives**: Used to ensure transaction validation, stable chain operation, and overall network security.
· **Growth / User Incentives**: Used to promote cross-border payments and transaction activity, increasing on-chain usage and circulation.
· **Ecosystem / Developer Incentives**: Used to support DApp development, payment gateway integration, stablecoin integration, and ecosystem expansion.
· **Marketing & Promotion**: Used for exchange promotions, marketing campaigns, and brand promotion.
· **Strategic / Reserve**: Used for long-term strategic cooperation, ecosystem expansion, potential acquisitions, or supporting ecosystem partners.

Category	Allocation	Purpose & Description	Vesting & Lock-up Description
Security / Node Incentives	35%	Network security and node operation incentives. Used to ensure transaction validation, stable chain operation, and overall network security.	Linear Unlocking: Distributed proportionally to active validators based on performance.
Growth / User Incentives	30%	User and merchant incentives. Used to promote cross-border payments and transaction activity, increasing on-chain usage and circulation.	Linear Unlocking: Released based on ecosystem activity and milestone-driven incentive programs.
Ecosystem / Developer Incentives	17%	Developer and ecosystem collaboration incentives. Used to support DApp development, payment gateway integration, stablecoin integration, and ecosystem expansion.	3-month lock-up following each annual issuance, followed by linear unlocking.
Market / Promotion	10%	Marketing and community building. Used for exchange promotions, marketing campaigns, and brand promotion.	Linear Unlocking: Released steadily to support ongoing marketing and community initiatives.
Strategic Reserve	7%	Strategic reserve fund. Used for long-term strategic cooperation, ecosystem expansion, potential acquisitions, or supporting ecosystem partners.	6-month lock-up following each annual issuance, followed by linear unlocking.

4.4 Revenue-Driven Buybacks and Net Supply Discipline

To complement issuance and reinforce economic alignment, Alchemy Chain incorporates a revenue-based buyback framework, intended to link network performance with token supply dynamics.

· **Revenue Sources**: transaction fees, settlement fees, bridge/cross-network execution fees, merchant revenue attributable to protocol-level services, and other protocol-level service fees.

· **Buyback**: a significant portion of protocol revenue will be allocated toward acquiring ACH in the open market, subject to protocol parameters, prevailing conditions, and governance decisions.

· **Automatic Adjustment**: certain buyback parameters may be automatically adjusted if net supply growth exceeds predefined thresholds, with the intent to maintain supply discipline during periods of higher issuance.

· **Net Inflation Target**: the protocol targets a long-term net effective inflation range of approximately around 1.5% on the Year 12, with the intention of further tightening supply as the ecosystem matures and revenue scales. Actual outcomes depend on ecosystem growth, market conditions, and governance decisions.

4.5 Key Takeaways

In plain terms:

· Sustainable Growth: Issuance is a tool specifically designed to fund network security and catalyze ecosystem expansion, ensuring the network remains competitive and robust.

· Protocol Discipline: Supply dynamics are governed by protocol rules designed to become more conservative as the network matures.

· Value Alignment: Global payment activity and protocol revenues are designed to balance issuance through systematic buybacks, aligning token utility with network success.

· Performance-Driven Value: Long-term value is intended to be a function of actual network adoption and revenue scale, supported by a tightening supply model.

4.6 Revenue Definition & Accounting Notes

To ensure clear understanding for ACH holders, Alchemy Chain distinguishes between two primary revenue streams:

· Protocol Revenue: fees and charges that are accrued at the protocol/ smart-contract level and verifiably recorded on-chain (or through provable settlement records if off-chain execution is involved).

· Company Revenue: revenues generated by the company that may not be fully attributable to protocol-level activities.

Alchemy Chain's buyback policy is supported by a defined percentage of Protocol Revenue, supplemented by a strategic portion of Company Revenue.

5 Alchemy USD Stablecoin—The Payments Bridge

Alchemy USD Stablecoin, which will be launched in Stage 2, is Alchemy Chain's canonical settlement asset for payments, serving as the bridge for crypto payment gateways by normalizing settlement across assets and chains. Users can pay in supported tokens, while native swap routes convert flows into Alchemy USD Stablecoin for merchant settlement or fiat off-ramp. It also acts as the hub for payment corridors, concentrating liquidity to reduce slippage and fees.

The stablecoin is USD fiat-backed with transparent reserves and routine attestations. In a typical payment flow, a consumer pays with a crypto asset, a native swap converts it to Alchemy USD Stablecoin, and the merchant settles in stablecoin or off-ramps to fiat. For cross-chain inbound payments, the bridge mints Alchemy USD Stablecoin on Alchemy Chain, achieving settlement finality in seconds before executing a fiat payout via integrated payout partners / regulated off-ramp providers.

This design delivers unified settlement with a single stable asset across wallets, chains, and fiat rails. It offers a merchant-grade user experience, and liquidity efficiency is improved through consolidated pools that enhance pricing and reduce fragmentation across ecosystems.

6 Liquidity and Interoperability

6.1 Liquidity

In Stage 2, Alchemy USD Stablecoin becomes the canonical fiat-backed stablecoin for payments and corridors on Alchemy Chain. Liquidity is bootstrapped and deepened through partnerships with M0, Bridge, and other institutional partners that supply and manage stablecoin and corridor liquidity on key routes. These partners help seed and maintain pools on Alchemy Chain and connected ecosystems, so that payment flows can be converted efficiently into Alchemy USD Stablecoin for settlement.
Native routing logic selects the cheapest and most liquid path for each transaction, taking into account pool depth, spreads, and fees. For merchants and users, this means they can pay or be paid in different assets on different chains, while Alchemy Chain automatically converts and consolidates flows into Alchemy USD Stablecoin with minimized slippage and predictable costs.

6.2 Cross-chain interoperability

Cross-chain capabilities in Stage 2 are implemented via a secure bridging architecture that supports fast, verifiable mint/burn flows for Alchemy USD Stablecoin and other supported assets. The canonical bridge uses a validator/committee-based model (with multi-signature attestations and rate limits) rather than unaudited custom bridges, and is developed and operated with strict security standards, including replay protection, bounded transfer limits, external audits, and continuous monitoring.
Alchemy Chain will prioritize connectivity to major ecosystems where users and merchants are most active, such as BNB Chain, Ethereum and its L2s (e.g., Arbitrum, Optimism, Base), and, where appropriate, leading non-EVM chains such as Solana and Tron. This allows liquidity and payment flows to be routed to and from these ecosystems seamlessly, while Alchemy Chain provides the unified, payment-focused settlement and fiat connectivity layer.

6.3 Cross-Chain ACH Bridge (Ethereum ↔ Alchemy Chain)

Alchemy Chain provides a canonical ACH cross-chain bridge between Ethereum and Alchemy Chain. The bridge enables users to move ACH from the Ethereum ACH contract (0xEd04915c23f00A313a544955524EB7DBD823143d) into Alchemy Chain and use it as the primary transaction asset on the network. The bridge is bi-directional and follows a custody + mint / burn + release model so that ACH circulating on Alchemy Chain via the canonical ACH token contract is backed by ACH held in custody on Ethereum.

6.3.1 Ethereum → Alchemy Chain (lock/custody → mint)

A user initiates bridging through the official bridge front-end and transfers ACH on Ethereum to a designated custody (“deposit”) address. After the deposit transaction is confirmed, the bridge operator reconciles the deposit amount (in ACH base units; ACH uses 8 decimals) and mints the equivalent amount of ACH on Alchemy Chain to the same user address by calling the mint function of the Alchemy Chain ACH token contract. This produces an identical user-facing balance on Alchemy Chain without requiring the user to acquire any separate native gas coin.

6.3.2 Alchemy Chain → Ethereum (burn → release)

To bridge back, a user sends ACH on Alchemy Chain to the ACH token contract and invokes the bridge burn function via the front-end. The bridge monitors the burn event on Alchemy Chain, and then releases the corresponding amount of previously custodied ACH on Ethereum back to the same address. Operationally, the bridge is run with strict reconciliation, monitoring, and configurable limits so that the minted supply on Alchemy Chain remains aligned with the custody balance on Ethereum.

7 Native Applications and Use Cases

· Merchant payments: Instant stablecoin acceptance with pre-configured ACH network fees. Gas sponsorship and settlement to crypto or fiat. For example: A user pays ETH from Ethereum to an online merchant in Brazil, Alchemy Chain routes the payment through a native swap into Alchemy USD Stablecoin with a pre-configured 0.5 ACH network fee, and the merchant can retain stablecoins on Alchemy Chain or initiate fiat settlement to BRL in their bank account via integrated payout providers.
· Cross-border payouts and remittances: Low-cost transfers with immediate settlement and optionally route payouts to bank accounts/mobile wallets via regulated payout partners. For example: A gig worker receives irregular payouts from a European platform in Alchemy USD Stablecoin on Alchemy Chain, which settles in seconds and is then off-ramped directly to their local bank or mobile wallet at a known FX rate and fee.
· RWA issuance and distribution: Compliant lifecycle controls for tokenized assets by TMS. For example: A regulated asset manager issues a tokenized short-term Treasury fund via TMS, using mint/burn and freeze/blacklist controls to meet regulatory requirements, while investors hold and transfer the RWA tokens like standard ERC-20s.

8 Development Roadmap

Timelines depend on regulatory approvals, partner integration schedules, and security audits. The roadmap is indicative and may change.

8.1 Stage 1— Q4 2025 — Payment Core and ACH Token Fee Settlement

· Alchemy Chain V1 Testnet launch (PoA consensus, EVM compatibility, core RPC)
· Token Management System (TMS) foundation: issuer controls, policy primitives, and managed token lifecycle capabilities
· Controlled Gas Fee System (CGFS): Global Gas Registry and Fee Engine (ACH-denominated fee schedules; no gas bidding)
· Scanner and Faucet
· Beta integrations with early merchant and issuer partners

8.2 Stage 2—Q1 2026 — Liquidity and Interoperability

· Deploy canonical ACH token contract on Alchemy Chain to support bridged ACH balances and protocol-level fee settlement
· Implement ACH token–settled gas fees: modify Alchemy Chain's fee deduction so transaction fees are deducted from the user's ACH token balance on Alchemy Chain (fees aggregated to a designated operator address for reuse); the chain's native coin is ignored, not distributed for mining, and not intended to circulate (value treated as 0)

· Develop the canonical ACH cross-chain bridge (Ethereum ↔ Alchemy Chain): users deposit ACH on Ethereum to a custody address via the bridge front-end; the operator mints equivalent ACH on Alchemy Chain to the same address; users can burn ACH on Alchemy Chain to redeem the previously custodied ACH on Ethereum back to the same address
· Public testnet update and external availability with bridge enabled

8.3 Stage 3—Q2 2026 — Alchemy USD Stablecoin (AUSD) Issuance and Payment Corridors

· Launch Alchemy USD Stablecoin as the canonical fiat-backed settlement asset on Alchemy Chain, including reserve transparency and routine attestations
· Expand TMS-managed stablecoin issuance capabilities (mint/burn workflows, policy APIs, issuer controls) for regulated partners
· Enable payment corridors and merchant settlement flows that normalize multi-asset payments into Alchemy USD Stablecoin for settlement and fiat off-ramp
· Deepen liquidity via institutional partners and corridor routing, including native swap routing optimized for slippage and predictable costs
· Production-readiness milestones: security audits, operational monitoring, and SLA-grade infrastructure towards mainnet launch

9 Developer and Partner Suite

SDKs and APIs are provided for core functions, including TMS. Developers have access to tools, including Alchemy Chain scanner and testnet faucet.

10 Positioning: How Alchemy Chain Compares

Among these offerings, Alchemy Chain is the only Web3-native payments L1 that combines a controlled, ACH-based fee model, issuer-grade token controls, and deeply integrated global fiat rails into a single, production-ready stack. Where others are either generic scaling frameworks, neutral stablecoin infrastructure, institution-only ledgers, or early-stage payment chains, Alchemy Chain is purpose-built for real-world payments: instant, deterministic finality; configurable network fees; native on/off-ramps in 170+ countries; and a canonical settlement stablecoin that unifies liquidity across chains and assets. This makes Alchemy Chain the preferred choice for wallets, merchants, and payment partners who need a dedicated chain where stablecoins and RWAs can move, settle, and convert to/from fiat with the predictability, compliance, and user experience required for mainstream adoption.

	Plasma	Arc	Tempo	Google Cloud Universal Ledger (GCUL)	Alchemy Chain
Status	Live	Testnet	Private Testnet	Private Testnet	2025 Q4 Testnet
Stablecoin	USDT	USDC	Multi-stablecoin	Multi-issuer including banks	Alchemy USD Stablecoin + Stablecoins and RWAs from ecosystem and partners
Gas Token	USDT	USDC	Any stablecoin	Managed by google cloud	ACH (canonical ACH token on Alchemy Chain; fees settled in ACH)
Deployment Model	Framework on top of an existing L1, and many child chains	Standalone L1, EVM-compatible, with Circle ecosystem integrated	Standalone chain, public/permissionless, by Stripechains	Private/permissioned ledger operated as a managed service by Google Cloud	Standalone L1, EVM-compatible, with a permissioned validator set (PoA) optimized for payments.
Fee Model	Fees depend on root chain gas and child-chain economics; users may face high costs on mass exit; designed for "mostly off-chain" cheap updates	Fees in USDC; "stable fee architecture" using smoothed, bounded base fee; supports paymasters so users can pay in local stablecoins	Optimized for low, predictable fees for payments	"As-a-service" with stable cloud billing; one API for all currencies/assets; fees abstracted from end users, aligned with enterprise billing	Controlled Gas Fee System with Global Gas Registry; pre-configured ACH fee per tx (configurable per merchant / user / token), no gas bidding or auctions
Fiat Connectivity	No fiat ability and fiat rails	Only via Circle's platform, bank <-> USDC/EURC	Only partner-driven, not native or centralized	Institutional only, such as commercial bank money and reserve-backed money, not consumer-facing	Designed for integration with regulated fiat rails via partners.
Target Users	Developers needing massive scalability; technically sophisticated ecosystems	Banks, fintechs, institutions, and developers needing compliant stablecoin infrastructure and cross-chain USDC hub	Payments builders (wallets, merchants, apps) needing a neutral, permissionless payment L1	Banks and large financial institutions; enterprise infrastructure, not retail-focused	Merchants, payment gateways, wallets, and partners needing crypto↔fiat payments globally
Use Case	Apps needing huge throughput with root-chain security, requires significant engineering	Stablecoin-native finance, cross-border and domestic payments, Tokenized Treasuries (USYC) and other RWAs	Consumer/merchant and app payments, wallet transfers, online commerce	Bank/FMI infrastructure, Domestic & cross-border payments, Clearing & settlement for multi-asset flows	Web3 + real-world payments: Merchant payments and checkout with fixed network fees, Cross-border payouts and remittances with direct local off-ramps, RWA and stablecoin issuance with issuer-grade controls, User self-ramping and on/off-ramp flows (cards, bank, wallets)
Compliance	Neutral technical framework; no intrinsic KYC/AML; each Plasma chain may add its own controls	Strongly aligned with regulatory frameworks (Basel, PFMI); deterministic finality, USDC gas, opt-in privacy	Positioned as neutral and permissionless	Compliance-by-design for banks: built-in compliance, private/permissioned access controls, designed for traditional financial institutions	Token-level controls (freeze, blacklist), auditable event trails; KYC/KYB via regulated partners

11 Conclusion

Alchemy Chain brings the payments engine of the internet onchain: controlled, predictable fees, fast deterministic settlement, issuer-grade token controls, and seamless fiat connectivity via integrated regulated partners for real-world commerce. By combining ACH-denominated fees settled in ACH via the canonical ACH token on Alchemy Chain with Alchemy USD Stablecoin as the primary settlement and corridor asset, it provides a unified, compliant settlement layer for everyday payments, cross-border payouts, and enterprise operations on a global scale.