



PROTOCOL SPECIFICATION · SEPTEMBER 2026

# VERDIS CHAIN

## Whitepaper

Technical Architecture & Protocol Specification

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An energy-efficient Layer-1 blockchain built with Substrate, powered by native DPoS consensus, an integrated AMM DEX, ink! smart contracts, and on-chain carbon credit tracking — connected to the Protremix AI Engineering ecosystem.

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**100B**

TOKEN SUPPLY

**16**

CUSTOM PALLETS

**21**

VALIDATORS

**6**

DEX POOLS

**DPoS**

CONSENSUS

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Organization

Verdis Chain / Protremix

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## 01 Executive Summary

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Verdis Chain is an energy-efficient Layer-1 blockchain built on Substrate, powered by native Delegated Proof-of-Stake (DPoS) consensus, an integrated AMM decentralized exchange (DEX), ink! smart contracts, and on-chain carbon credit tracking. The protocol is designed to prove that blockchain infrastructure can be environmentally regenerative rather than destructive.

The native token, VRDX, has a fixed supply of 100 billion with 9 decimals, serving as the gas token, staking asset, governance instrument, and medium of exchange across the ecosystem. VRDX is not an ERC-20 wrapper — it is woven into the consensus layer itself.

Verdis Chain connects to Protremix, an AI Engineering Operating System that provides smart contract auditing, AI-powered development tools, and a plugin marketplace. Together, they form a complete green technology stack: blockchain provides trust and value transfer, AI provides intelligence and automation.

The protocol features 16 custom Substrate pallets, including DPoS consensus with 21 target validators, an AMM DEX with 6 liquidity pools, carbon credit minting and retirement, green validator scoring, reforestation logging, governance, IBC cross-chain communication, and Solana-inspired innovations (Gulf Stream, Turbine, Sealevel execution, ZK compression).

|                             |                                 |                         |                       |                            |
|-----------------------------|---------------------------------|-------------------------|-----------------------|----------------------------|
| <b>100B</b><br>TOTAL SUPPLY | <b>16</b><br>CUSTOM<br>PALLETES | <b>21</b><br>VALIDATORS | <b>6</b><br>DEX POOLS | <b>20%</b><br>FEE → CARBON |
|-----------------------------|---------------------------------|-------------------------|-----------------------|----------------------------|

## 02 The Problem We're Solving

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The blockchain industry faces three fundamental crises: environmental destruction, economic centralization, and technical fragmentation. Verdis Chain was built to address all three.

### Energy Consumption Crisis

Bitcoin and Ethereum combined consume more electricity than entire nations. Proof-of-Work mining produces 50M+ tonnes of CO2 annually, making blockchain one of the most environmentally destructive technologies ever created.

### **Validator Centralization**

Most DPoS and PoS networks concentrate power among a small number of institutional validators. Without green energy incentives, networks become oligarchies that prioritize profit over security.

### **Fragmented Ecosystems**

Blockchain, AI, and traditional fintech operate in silos. Developers must stitch together multiple chains, bridges, AI APIs, and payment systems with no unified standard — creating friction and security risks.

### **Opaque Carbon Markets**

Voluntary carbon credit markets suffer from double-counting, lack of transparency, and no real-time verification. Projects cannot prove their environmental impact. Buyers cannot trust that credits represent genuine offsets.

### **DEX Security Vulnerabilities**

Existing AMM DEX implementations have suffered from reentrancy attacks, overflow/underflow exploits, and LP token manipulation. Many are built as smart contracts on top of chains rather than as native pallets.

### **Lack of Green Incentives**

No major blockchain rewards validators for using renewable energy. There is no on-chain mechanism to verify, score, or incentivize green operations. The industry talks about sustainability but has no economic model to enforce it.

## **03 The Verdis Solution**

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Verdis Chain addresses each problem with a purpose-built, native-layer solution — not a patch or a smart contract overlay.

### **Carbon-Native Architecture**

Carbon credit minting, retirement, and verification are built directly into the protocol as native pallets. Every transaction contributes to carbon offsetting through a 20% fee auto-retire mechanism.

## **DPoS with Green Scoring**

Validators are incentivized to operate on 100% renewable energy through on-chain green scoring. Green validators earn a +2.5% APY bonus yield. 21 active validators with geographic diversity.

## **Native AMM DEX**

The DEX is implemented as a Substrate pallet, not an ink!/Solidity contract. This eliminates reentrancy risks, reduces gas costs, and provides overflow-safe arithmetic with `checked_mul/checked_add` operations.

## **Unified Ecosystem with Protremix**

Verdis Chain and Protremix are designed as a single ecosystem. Blockchain provides trust and value transfer; AI provides intelligence, smart contract auditing, and development tools.

## **Transparent On-Chain Carbon Credits**

Every carbon credit is minted on-chain with verifiable provenance. Retirements are public and immutable. 1 tCO<sub>2</sub>e = 100 Eco-Credits. Double-counting is impossible by protocol design.

## **Solana-Inspired Performance**

Gulf Stream transaction forwarding, Turbine block propagation, Sealevel parallel execution, and ZK compression — adapted for the Substrate runtime to maximize throughput without sacrificing decentralization.

# **04 Our Story**

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Verdis Chain was conceived in 2024 by Rojs Gordons, founder of Protremix, after years of building fintech payment systems and witnessing the environmental toll of blockchain infrastructure firsthand. The project began with a simple question: what if a blockchain could be environmentally regenerative by design — not as a marketing claim, but as a protocol-level invariant?

The team chose Substrate for its modular runtime architecture, enabling custom pallets for carbon credits, green scoring, and DPoS consensus without the constraints of an EVM-only environment. The first testnet launched with 6 validator nodes, 16 custom pallets, and a fully native AMM DEX — no smart contract overlays.

Today, Verdis Chain is in testnet with 21 active validators, 6 seeded liquidity pools, working DPoS consensus with epoch rotation, GRANDPA finality, and integrated carbon credit tracking.

The codebase comprises 734 passing tests across all pallets, with a release freeze declared for external security audit.

## 05 Why VRDX is a Native Token

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VRDX is not an ERC-20 token deployed on another chain. It is the native token of the Verdis Chain protocol, generated at genesis and woven into every layer of the runtime. This distinction is fundamental: it means VRDX powers consensus itself, not just an application layer on top of someone else's chain.

As a native Substrate token, VRDX benefits from the full weight of the runtime's security model. Gas payments, staking deposits, governance votes, DEX liquidity, and carbon credit collateralization all use the same underlying asset — no bridges, no wrappers, no counterparty risk.

The 9-decimal design ensures microtransactions remain practical. A typical transfer costs approximately 0.0001 VRDX, making sub-cent transactions feasible at mainnet scale. The 100B supply provides sufficient granularity for global adoption while maintaining a manageable token economy.

## 06 Technical Architecture

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Verdis Chain is built on Substrate, the modular blockchain framework developed by Parity Technologies. The runtime is compiled to WebAssembly (WASM), enabling forkless runtime upgrades and cross-platform execution. The consensus layer uses BABE for block production and GRANDPA for deterministic finality.

### Runtime Pallets

The Verdis runtime integrates 16 custom pallets alongside core FRAME pallets:

| PALLET  | FUNCTION                                                                          |
|---------|-----------------------------------------------------------------------------------|
| dpos    | Delegated Proof-of-Stake consensus, epoch rotation, validator selection, slashing |
| amm-dex | Native AMM decentralized exchange with liquidity pools and swap operations        |
| eco     | Carbon credit minting, retirement, green validator scoring, reforestation logging |

| PALLET          | FUNCTION                                                            |
|-----------------|---------------------------------------------------------------------|
| fungible-tokens | Custom token creation with max supply caps and owner-only minting   |
| vesting         | Token vesting schedules with cliff and linear release               |
| presale         | Whitelist-enforced token presale with cap checks                    |
| governance      | On-chain proposal submission, voting, and treasury spend management |
| ibc             | Inter-Blockchain Communication for cross-chain messaging            |
| poh             | Proof of Humanity identity verification                             |
| turbine         | Solana-inspired block propagation optimization                      |
| zk-compression  | Zero-knowledge proof compression for scalable state                 |
| circuit-breaker | Emergency pallet pause mechanism                                    |
| tokenomics      | Token distribution tracking and supply management                   |
| treasury        | DAO-governed treasury with proposal-based spending                  |
| session         | Validator session key management                                    |
| sudo            | Testnet administrative access (removed before mainnet)              |

## Consensus Stack

Block production follows the BABE (Blind Assignment for Blockchain Extension) protocol, which uses a VRF-based slot system to randomly assign block production rights. Finality is provided by GRANDPA (GHOST-based Recursive ANcestor-Deriving Tree Agreement), which can finalize blocks in parallel rather than sequentially.

The DPoS layer sits on top of this consensus base, selecting 21 active validators per epoch (1,200 blocks). Validators are scored on performance, uptime, and green energy usage. Delegators bond VRDX to validators and share in staking rewards proportional to their stake.

## 07 DPoS Consensus & Block Production

The Delegated Proof-of-Stake mechanism is implemented as a native Substrate pallet, not a smart contract. This provides direct access to the consensus layer and eliminates the overhead and risk of contract-based staking systems.

### Validator Selection

Each epoch consists of 1,200 blocks (~2 hours at 6-second block times). At epoch boundaries, the top 21 validators by total delegated stake are selected for block production. Validators must register with a valid session key and meet minimum self-stake requirements.

### Slashing Mechanics

| VIOLATION             | PENALTY         | CONDITION             |
|-----------------------|-----------------|-----------------------|
| Double-signing        | 10% stake slash | Equivocation detected |
| Downtime              | 5% stake slash  | 50+ missed blocks     |
| Max missed epochs     | Deactivation    | 50,000 epochs         |
| Reactivation cooldown | 100 epochs      | After deactivation    |

### Green Validator Scoring

Validators self-report their energy source. Those operating on verified 100% renewable energy receive a green score bonus, translating to +2.5% additional APY yield. This creates a direct economic incentive for sustainable operations — the first such mechanism in a Layer-1 blockchain.

## 08 Smart Contracts & Developer Platform

Verdis Chain supports ink! smart contracts — a Rust-based DSL compiled to WebAssembly. ink! provides memory safety, type checking, and compile-time verification that Solidity cannot match. Contracts execute within a sandboxed environment with metered gas and overflow-safe arithmetic.

## Developer Tools

- JavaScript SDK with 51 methods, native WebSocket subscriptions, zero dependencies
- Web wallet and Android wallet (available on Google Play Internal Testing)
- Block explorer with search, transaction history, and validator monitoring
- RPC API with 149 methods including custom DPoS, DEX, and eco queries
- Non-custodial transaction relay with rate limiting and CORS restrictions

## 09 Native AMM DEX Architecture

The AMM DEX is implemented as a native Substrate pallet (pallet-amm-dex), not as a smart contract. This architectural decision eliminates entire classes of vulnerabilities that have plagued EVM-based DEX protocols: reentrancy attacks, ERC-20 approval exploits, and proxy contract upgrade risks.

### Liquidity Pools

The DEX supports 6 seeded liquidity pools from genesis, each using the constant product formula ( $x \times y = k$ ) with overflow-safe checked arithmetic. Liquidity providers deposit equal-value token pairs and receive LP tokens representing their pool share.

| POOL      | PAIR                   | FEE TIER |
|-----------|------------------------|----------|
| VRDX/ECO  | VRDX ↔ Eco-Token       | 0.25%    |
| VRDX/USDT | VRDX ↔ Stablecoin      | 0.25%    |
| VRDX/BTC  | VRDX ↔ Wrapped BTC     | 0.30%    |
| VRDX/ETH  | VRDX ↔ Wrapped ETH     | 0.30%    |
| ECO/USDT  | Eco-Token ↔ Stablecoin | 0.25%    |
| VRDX/CO2  | VRDX ↔ Carbon Credit   | 0.20%    |

### Security Features

All swap operations enforce slippage protection via minimum output amounts. The constant product invariant is checked after every operation using `checked_mul` and `checked_add` — if any arithmetic overflow is detected, the transaction reverts entirely. The CEI (Checks-Effects-Interactions) pattern is strictly enforced.

## 10 Connection to Protremix

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Protremix is an AI Engineering Operating System that serves as the intelligence layer of the Verdis ecosystem. Where Verdis Chain provides trust, value transfer, and decentralized consensus, Protremix provides AI-powered development, smart contract auditing, and automation tools.

### Integration Points

- AI-powered smart contract auditing — submit ink! contracts for automated vulnerability analysis
- Development tools — AI-assisted contract generation, testing, and deployment
- Plugin marketplace — third-party developers publish tools, integrations, and services
- Unified identity — single authentication across both platforms

## 11 The Verdis Ecosystem Vision

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The Verdis ecosystem is designed as a complete green technology stack. Blockchain infrastructure provides the trust layer; AI provides the intelligence layer; carbon credits provide the environmental layer. Each component reinforces the others.

Developers can build decentralized applications that are automatically carbon-negative, AI-audited, and powered by a native DEX — without stitching together disparate protocols across multiple chains. Validators are incentivized to operate sustainably. Users can transact with sub-cent fees while knowing that 20% of every fee auto-retires carbon credits.

**Blockchain provides trust. AI provides intelligence. Carbon credits provide the environmental layer. Each reinforces the others.**

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## 12 Decentralized Governance Model

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Verdis Chain implements on-chain governance through a native pallet. VRDX holders can submit proposals, vote on protocol upgrades, and approve treasury disbursements. The governance system is designed to be accessible to all token holders, not just large validators.

Proposal types include runtime upgrades (via forkless WASM deployment), parameter adjustments (fees, staking thresholds, epoch lengths), and treasury grants for ecosystem development. Voting weight is proportional to bonded VRDX. A quorum threshold prevents governance attacks by small holders.

For mainnet, the Council will consist of 3 members requiring 2/3 majority for privileged operations — replacing the testnet sudo mechanism. This ensures no single key holder can unilaterally control protocol parameters, slash validators, or modify treasury disbursements.

## 13 Security Architecture

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Security is the foundational priority of Verdis Chain. The protocol has undergone internal security auditing with all P0 and P1 vulnerabilities resolved. A release freeze has been declared at commit 86bec212 in preparation for external audit by Halborn or equivalent.

### Completed Security Measures

- DEX math uses checked arithmetic (checked\_mul, checked\_add), k-invariant enforcement, CEI pattern
- Presale enforces whitelist verification and hard cap checks
- Vesting enforces cliff periods before linear release begins
- Fungible tokens enforce max\_supply caps with owner-only minting
- Transaction relay is non-custodial with CORS restrictions and rate limiting
- RPC proxy blocks dangerous methods (insertKey, rotateKeys, setStorage, state\_call)
- Sensitive files (SSH keys, wallet backups) purged from git history across 1,205 commits

### Pre-Mainnet Requirements

- Remove Sudo pallet from runtime
- Replace 20 ensure\_root calls with Council (2/3) origin across 6 pallets
- Change Circuit Breaker admin origin from root to Council majority
- Replace Treasury PalletId with 3-of-5 multisig
- Complete external security audit
- Air-gapped key ceremony for validator, council, and multisig keys

## 14 Real-World Use Cases

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- **Carbon Credit Trading** — Companies purchase and retire on-chain carbon credits with immutable provenance verification
- **Green DeFi** — Decentralized trading, lending, and liquidity provision with automatic carbon offsetting
- **Validator Operations** — Node operators earn additional yield by running on verified renewable energy
- **Supply Chain Tracking** — Track environmental impact of products through verifiable on-chain records
- **Reforestation Funding** — Treasury grants fund verified reforestation projects logged on-chain
- **AI-Audited Contracts** — Developers deploy ink! contracts audited by Protremix AI before execution

## 15 Improvement Plan

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Verdis Chain follows a disciplined engineering approach: audit, fix, secure, test, then expand. The priority is not to add features blindly but to ensure every existing component is correct, secure, and production-ready before mainnet launch.

The immediate focus is on completing the external security audit, executing the air-gapped key ceremony, deploying infrastructure across 3 geographic locations, and verifying genesis determinism. Feature expansion — including ZK rollups, cross-chain carbon credit protocol, and AI-powered autonomous governance — follows after mainnet stabilization.

## 16 Token Overview

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VRDX is the native token of Verdis Chain, with a fixed maximum supply of 100 billion (100,000,000,000) and 9 decimal places. The token serves multiple protocol-level functions: gas for transactions, bonding for DPoS staking, governance voting weight, DEX liquidity provision, and carbon credit collateralization.

| PARAMETER    | VALUE |
|--------------|-------|
| Token Symbol | VRDX  |

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| PARAMETER                 | VALUE                  |
|---------------------------|------------------------|
| Total Supply              | 100,000,000,000 (100B) |
| Decimals                  | 9                      |
| Initial Circulating (TGE) | ~8% (8B VRDX)          |
| Consensus Staking         | 20B allocated          |
| Ecosystem & Grants        | 25B allocated          |
| Treasury                  | 20B allocated          |

## 17 Supply Distribution

The 100B VRDX supply is distributed across 9 categories, designed to balance ecosystem growth, validator security, community incentives, and investor alignment.

| CATEGORY                     | ALLOCATION     | %     | PURPOSE                                |
|------------------------------|----------------|-------|----------------------------------------|
| Ecosystem & Developer Grants | 25,000,000,000 | 25.0% | Grants, partnerships, ecosystem growth |
| PoS Staking Rewards          | 20,000,000,000 | 20.0% | Validator and delegator rewards        |
| Treasury                     | 20,000,000,000 | 20.0% | DAO-governed protocol treasury         |
| Development                  | 10,000,000,000 | 10.0% | Core protocol development              |
| Liquidity                    | 10,000,000,000 | 10.0% | DEX liquidity provisioning             |
| Community                    | 5,000,000,000  | 5.0%  | Community rewards, airdrops, faucets   |
| Team & Advisors              | 5,000,000,000  | 5.0%  | Team allocation with vesting           |
| Seed / Strategic             | 3,000,000,000  | 3.0%  | Early strategic investors              |

| CATEGORY       | ALLOCATION             | %             | PURPOSE              |
|----------------|------------------------|---------------|----------------------|
| Public Presale | 2,000,000,000          | 2.0%          | Public presale round |
| <b>Total</b>   | <b>100,000,000,000</b> | <b>100.0%</b> |                      |

Ecosystem and staking combined represent 45% of total supply, ensuring the majority of tokens serve network security and growth. Investor allocation (Seed + Presale) totals 5B (5%), with structured vesting to prevent dump pressure. The DAO-governed treasury controls 20B, requiring Council approval for disbursement.

## 18 Vesting Schedule

Structured release terms enforce long-term alignment across team, investors, and ecosystem participants. From TGE day, only 8% of tokens are circulating. Investor tokens are fully locked with 3-12 month cliffs.

| MILESTONE   | UNLOCK                                       |
|-------------|----------------------------------------------|
| TGE (Day 0) | 8B (8%) initial circulating                  |
| Month 3     | Community round cliff ends                   |
| Month 6     | Presale cliff ends                           |
| Month 12    | Seed + Team cliff ends — largest unlock wave |
| Month 24    | Seed round fully vested                      |
| Month 36    | Presale fully vested                         |
| Month 48    | Team fully vested                            |
| Year 10     | 95B+ circulating                             |

### KEY INSIGHT

The first unlock event is at Month 3 (Community round). The largest unlock wave starts at Month 12 when Seed + Team cliffs end. This design prevents dump pressure and ensures long-term price stability.

## 19 Staking Rewards

Earn passive rewards by delegating VRDX to active validators. Green validators operating on 100% renewable energy earn an additional yield bonus.

|                         |                             |                         |                        |
|-------------------------|-----------------------------|-------------------------|------------------------|
| <b>8.5%</b><br>BASE APY | <b>+2.5%</b><br>GREEN BONUS | <b>21</b><br>VALIDATORS | <b>7d</b><br>UNBONDING |
|-------------------------|-----------------------------|-------------------------|------------------------|

| PARAMETER              | VALUE                       |
|------------------------|-----------------------------|
| Active Validators      | 21 per epoch (1,200 blocks) |
| Base Staking APY       | 8.5% target rate            |
| Green Validator Bonus  | +2.5% APY                   |
| Unbonding Period       | 7 days                      |
| Slashing — Double-sign | 10% stake slash             |
| Slashing — Downtime    | 5% stake slash (50+ blocks) |

Staking rewards are funded by inflation and DEX transaction fees. The combined base + green bonus yields up to 11.0% APY for validators operating on verified zero-carbon energy — creating the first protocol-level economic incentive for sustainable blockchain operations.

## 20 Carbon Credit Economics

Verdis Chain embeds direct environmental offset mechanisms into native consensus and smart contract execution. Every 100 VRDX transaction fee batch is tied to verified carbon credits. 20% of network fees are automatically directed to purchasing and retiring carbon offsets on-chain via dedicated pallet\_eco precompiles.

| PARAMETER            | VALUE                   |
|----------------------|-------------------------|
| Fee Auto-Retire Rate | 20% of transaction fees |
| Eco Fund Allocation  | 5,000,000,000 VRDX      |

| PARAMETER          | VALUE                                   |
|--------------------|-----------------------------------------|
| Carbon Credit Unit | 1 tCO <sub>2</sub> e = 100 Eco-Credits  |
| Verification       | On-chain, immutable, publicly auditable |
| Retirement         | Permanent — credits cannot be re-used   |

Carbon credits are minted with verifiable provenance. Each credit references a specific offset project with documentation. Retirements are public and immutable — once a credit is retired, it cannot be transferred, re-sold, or double-counted. This is enforced at the protocol level, not by policy.

## 21 VRDX Token Utility

- **Network Gas Fees** — Pay sub-cent transaction fees (~0.0001 VRDX average) across Substrate native transfers and ink! smart contract executions
- **DPoS Staking** — Bond VRDX to secure block validation or delegate to active validators to earn up to 11.0% APY yield
- **On-Chain Governance** — Submit and vote on runtime upgrade proposals, parameter tweaks, and protocol treasury grant disbursements
- **DEX Liquidity & Swaps** — Route trades through native AMM DEX liquidity pools with discounted trading fees for VRDX stakers (0.15% tier)
- **Carbon Credit Minting** — Collateralize VRDX tokens to issue, verify, and trade standardized on-chain carbon credit tokens (pCO<sub>2</sub>)
- **Cross-Chain Bridge** — Lock VRDX on Verdis Chain to mint wrapped VRDX tokens across BSC, Ethereum, and Polygon liquidity pools

## 22 Our Team

The team behind Verdis Chain combines decades of fintech, blockchain, software engineering, and legal expertise.

### Rojs Gordons — Founder & Lead Developer

Founder of Protremix. Leads architecture, development, and engineering of the Verdis Chain blockchain, including Substrate runtime, pallets, web infrastructure, and ecosystem tools.

**Dorian Jean — CEO**

CEO of Verdis Chain and owner of Shilat18 Ltd, specializing in recycling of eco-products. 10+ years in the eco-products and recycling industry. Leads strategic direction, business development, and partnerships.

**Mark Roetzer, P.E. — Chief Technical Officer**

Licensed Professional Engineer (NYS) with B.S. in Civil Engineering Technology from SUNY Polytechnic Institute. Director of Public Works for City of Jamestown, NY. Oversees engineering direction and infrastructure architecture.

**Elizabeth Jefferson — Head of Product**

Responsible for product strategy, ecosystem development, wallet, explorer, and user experience. Oversees user-facing products and ecosystem services with focus on accessible tools for developers and validators.

**María Dolores Márquez de Prado — Legal Counsel**

Graduated in Law from Complutense University of Madrid. Prosecutor for 17+ years. Appointed Prosecutor of the Supreme Court (1999-2007). Advises on corporate structure, blockchain regulatory matters, and token legal considerations.

**Ignacio Martínez-Arrieta — Legal & Compliance**

Madrid Bar Association member since 2010. Master's in EU Law (ULB Brussels) and Economic Criminal Law (URJC). CESCO Compliance certified. Previously legal adviser in the European Parliament. Specializes in compliance and internal investigations.

## 23 Token Release Roadmap

Phase-by-phase execution timeline for token unlocking, ecosystem grants, and global reforestation expansion.

| PHASE   | TIMELINE | MILESTONE                                                         |
|---------|----------|-------------------------------------------------------------------|
| Phase 1 | Q1 2026  | Genesis & TGE — Mainnet genesis launch, 24.5B initial circulating |
| Phase 2 | Q2 2026  | DPoS Staking & DEX Activation — 21 validator slots, 8.2B bonded   |
| Phase 3 | Q3 2026  | Eco Precompiles & Presale Unlock — Carbon offset activation       |
| Phase 4 | Q1 2027  | Seed, Private & Team Cliff End — Linear vesting begins            |

| PHASE   | TIMELINE  | MILESTONE                                                               |
|---------|-----------|-------------------------------------------------------------------------|
| Phase 5 | 2027–2030 | Global Carbon Offset Scaling — 10M+ tCO <sub>2</sub> e verified offsets |
| Phase 6 | 2030–2032 | AI-Powered Autonomous Governance via Protremix                          |
| Phase 7 | 2030–2033 | Cross-Chain Carbon Credit Protocol — 100M+ tCO <sub>2</sub> e/year      |
| Phase 8 | 2031–2034 | ZK Rollup & 10,000+ TPS Scaling                                         |
| Phase 9 | 2032–2035 | Decentralized Identity & Green Certification Network                    |

## 24 Building the Green Standard

Verdis Chain proves that blockchain technology can be environmentally regenerative. By embedding carbon credits, green validator scoring, and reforestation tracking directly into the consensus layer, we make sustainability a protocol-level feature rather than an afterthought.

With 16 custom pallets, native AMM DEX, ink! smart contracts, DPoS consensus, IBC cross-chain communication, and integration with the Protremix AI ecosystem, Verdis Chain provides a complete platform for the next generation of green decentralized applications.

The 100B VRDX token economy is designed for long-term sustainability — with 45% allocated to ecosystem and staking, 5% to investors with structured vesting, and a DAO-governed treasury ensuring community control. Every economic parameter is designed to incentivize decentralization, security, and environmental impact.

### OUR MISSION

Build technology that remains reliable, trusted, and environmentally regenerative for many years. Every decision moves the protocol closer to world-class engineering excellence — with the planet at its core.