OBEN: Orion's Belt Energy Network

A 3-Rail, Planetary Lattice Crypto Ecosystem Inspired by 1H and MHD Fields

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1. Abstract

OBEN (Orion's Belt Energy Network) is a global, multi-rail crypto ecosystem built on a 20-node planetary lattice:

- 18 active nodes (3 per continent × 6 continents)

- 2 core poles (logical Antarctic Genesis and South-Pole Omega)

On this lattice, three independent but coupled blockchains—Libra, Lithium, and Orion—circulate value as if they were electron, proton, and neutron fields. Each rail forms a closed loop around the planet, touching every continent once per cycle, with:

- Directional flow from Alpha (Genesis core) toward Omega (South core)

- A return leg completing the loop

- Nodes organized in four layers (core, formation, expansion, crown) mirroring spring / summer / fall / winter and seed → formation → expansion → isolation phases.

The system is designed for:

- Global public payments (Libra)

- Private / institutional settlement (Lithium)

- Governance, rules, and balancing (Orion)

OBEN is implemented initially as a layer-2 architecture anchored on Ethereum, with real-world node instances hosted via AWS, and Infura/MetaMask providing node/API connectivity. The geometry is inspired by 1H ice lattice patterns and magnetohydrodynamic (MHD) field loops, but these serve as design analogies, not claims of physical free-energy extraction.

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2. Network Geometry: The 20-Node Planetary Lattice

2.1 Node types and layers

The OBEN lattice is a single global hexagonal structure with:

- 2 Core nodes (L0 – Core Layer)

    1. CORE-ANT

        - Logical Antarctica Genesis node

        - Represents Alpha / seed / north-side origin in the model

        - No chains pass through; it is the axis for orientation.

    2. CORE-SP

        - South-Pole / Oceania core

        - Represents Omega / terminal / south-side closure

        - Also chain-silent, anchoring the opposite end of the dipole.

- 18 Continental nodes (L1–L3)

    For each of the six continents: NA, EU, AS, OC, AF, SA there are three nodes:

    1. FS-XX – Formation node (L1 – Inner Shell)

        - "Spring" / intake / structuring layer

    2. XS-XX – Expansion node (L2 – Outer Shell)

■ "Summer / Fall" growth, distribution, scaling layer

3. CT-XX – Crown node (L3 – Equator / User Gateway)

   ■ "Winter / Harvest" / external user interface and exit/entry layer

Where XX $\in$ {NA, EU, AS, OC, AF, SA}.

2.2 Hemispheres, bands, and polarity

Each continental node carries geospatial meta-tags:

- Hemisphere

  - N for North: NA / EU / AS

  - S for South: SA / AF / OC

  - EQ for equator-like Crown Tip nodes

  - CENTER for CORE-ANT (logical center)

- Latitude band (conceptual, not exact GPS)

  - Pole-Center for CORE-ANT

  - Pole-South for CORE-SP

  - Mid-North / Outer-North

  - Mid-South / Outer-South

  - Equator for all CT-* nodes

- PoleRole

  - Alpha-Seed for CORE-ANT (conceptual source)

- Omega-Terminal for CORE-SP (conceptual sink)

- Neutral-0 for all equator Crown nodes (CT-*)

- empty/none for normal shell nodes

This meta-structure mirrors a planetary dipole + equatorial neutral plane and is used logically in tokenomics and governance (not as a literal geophysics engine).

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3. The Three Rails: Libra, Lithium, Orion

3.1 Particle analogy

Each rail is mapped to a particle role and a color:

- Libra Rail (Public) – Electron field

    - Token: LIBRA (native unit)

    - Role: public, high-velocity payments / micro-flows

    - Particle analogy: electrons (−)

    - Color: Blue / teal (cool)

- Lithium Rail (Private / Institutional) – Proton field

    - Token: LITHIUM (native unit)

    - Role: private, collateralized, institutional and B2B flows

    - Particle analogy: protons (+)

    - Color: Red / warm

- Orion Rail (Governance) – Neutron field

- ○ Token: ORION (native unit)

- ○ Role: governance, rules, configuration, final settlement logic

- ○ Particle analogy: neutrons (0)

- ○ Color: White / neutral, with warm/cool accent per hemisphere

These are economic and computational fields, not literal particles, but the analogy guides how direction, load, and stabilization work conceptually.

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4. Chain Flows on the Lattice

4.1 Continent sequence

All three chains follow the same planetary ring in terms of continents:

$$NA \rightarrow EU \rightarrow AS \rightarrow OC \rightarrow AF \rightarrow SA \rightarrow \text{back to NA}$$

Each chain uses one node per continent, but a different node type (FS / XS / CT), so each rail experiences different stages as it travels.

4.2 Libra loop (electron-like, outer/user-heavy)

Libra sees more of the crown and expansion surfaces, corresponding to user and market activity.

Example v2 loop:

- ● Nodes (one per continent):

  - ○ CT-NA (Crown, EQ)

  - ○ FS-EU (Formation, N)

  - ○ XS-AS (Expansion, N)

- ○ CT-OC (Crown, EQ)

- ○ FS-AF (Formation, S)

- ○ XS-SA (Expansion, S)

- Closed loop sequence:

CT-NA → FS-EU → XS-AS → CT-OC → FS-AF → XS-SA → CT-NA

Interpretation:

- Libra flows north → equator → north → equator → south → south → back to equator,

- Circulating public value through a full vertical cycle as it wraps around the globe.

4.3 Lithium loop (proton-like, inner/outer institutional spine)

Lithium sees a mix with emphasis on formation and expansion plus some crowns.

Example v2 loop:

- Nodes:

- ○ FS-NA (Formation, N)

- ○ XS-EU (Expansion, N)

- ○ CT-AS (Crown, EQ)

- ○ FS-OC (Formation, S)

- ○ XS-AF (Expansion, S)

- ○ CT-SA (Crown, EQ)

- Sequence:

FS-NA → XS-EU → CT-AS → FS-OC → XS-AF → CT-SA → FS-NA

Interpretation:

- Lithium flows through deeper shell nodes that feel more like banks, treasuries, and custodians, and passes periodically through equator crowns for rebalancing and cross-sea settlement.

4.4 Orion loop (neutron-like, governance and binding)

Orion acts as the binding and rule field that weaves through inner/outer shells and equator crowns.

Example v2 loop:

- Nodes:

  - XS-NA (Expansion, N)

  - CT-EU (Crown, EQ)

  - FS-AS (Formation, N)

  - XS-OC (Expansion, S)

  - CT-AF (Crown, EQ)

  - FS-SA (Formation, S)

- Sequence:

XS-NA → CT-EU → FS-AS → XS-OC → CT-AF → FS-SA → XS-NA

Interpretation:

- Orion moves between policy nodes and equator neutral gateways, carrying:

    - configuration updates,

    - permission changes,

    - system parameters,

    - and final settlement commitments for disputes.

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5. Token Design, Value Bands, and Pools

OBEN defines three native tokens, one per rail, each paired initially against ETH in Uniswap v3 with distinct price bands and roles.

All three tokens share:

- Total supply: 100,000,000 units per token:

    - 100,000,000 ORION

    - 100,000,000 LITHIUM

    - 100,000,000 LIBRA

- Initial liquidity for pools: 1,000,000 units of each token reserved to seed Uniswap v3 liquidity.

- Initial pool pairing: each token is paired with ETH at 0.3% fee tier.

Color + particle mapping stays as we just defined:

- ORION – neutron / governance, neutral white

- LITHIUM – proton / private, warm / red band

- LIBRA – electron / public, cool / blue/teal band

Below are the precise design ranges and intent for each.

5.1 ORION – Governance / Sovereign Rail Token (Neutron Field)

Role

- Top-tier governance / sovereign token of OBEN.

- Used for:

    - protocol upgrades (Orion rail governance),

    - dispute resolution and arbitration,

    - staking by node operators and high-trust entities,

    - weighting constitutional changes across the triple-rail system.

Pool design (Uniswap v3)

- Pair: ORION / ETH

- Fee tier: 0.3%

Initial design price

- Midpoint: 1 ORION = 0.10 ETH

- Active price range:

    - Min: 1 ORION = 0.07 ETH

    - Max: 1 ORION = 0.13 ETH

This is a tight band (~±30%) around the midpoint, reflecting:

- "Governance-grade" token,

- high perceived value,

- intentional reduced volatility vs. LIBRA and LITHIUM.

Lattice interpretation

- ORION mass is concentrated where rules are enforced:

    - along the Orion governance loop (FS/XS/CT nodes per chain flow),

    - especially on nodes designated with governance roles (often inner shell + equator crowns).

- In the particle analogy:

    - ORION behaves as neutron mass – neutral in direct "charge," but essential for binding the structure and stabilizing LIBRA/LITHIUM relationships.

5.2 LITHIUM – Private / Enterprise Rail Token (Proton Field)

Role

- Mid-tier token for private, enterprise, and institutional usage.

- Supports:

  - B2B settlements,

  - treasury operations,

  - collateral for structured products on Libra,

  - regulated / KYC corridors.

Pool design (Uniswap v3)

- Pair: LITHIUM / ETH

- Fee tier: 0.3%

Initial design price

- Midpoint: 1 LITHIUM = 0.03 ETH

- Active price range:

  - Min: 1 LITHIUM = 0.015 ETH (0.5× mid)

  - Max: 1 LITHIUM = 0.06 ETH (2× mid)

This is a medium-width band (0.5×–2×), allowing:

- more flexibility than ORION,

- enough room for institutional repricing,

- but still significantly more "solid" than LIBRA.

Lattice interpretation

- LITHIUM "mass" collects heavily at Formation (FS-*) and Expansion (XS-*) nodes in the Lithium loop.

- These nodes behave like proton-density regions, anchoring:

  - regional credit,

  - long-term liquidity,

  - institutional trust.

5.3 LIBRA – Public / Retail Rail Token (Electron Field)

Role

- Public-facing, high-access token for retail and open markets.
- Used for:

  - everyday payments,

  - small business flows,

  - cross-border transfers with minimal friction.

Pool design (Uniswap v3)

- Pair: LIBRA / ETH

- Fee tier: 0.3%

Initial design price

- Midpoint: 1 LIBRA = 0.003 ETH

- Active price range:

  - Min: 1 LIBRA = 0.0005 ETH

  - Max: 1 LIBRA = 0.01 ETH

This is a very wide band, designed to:

- absorb public-market volatility,

- remain cheap enough for global users,

- behave like a high-velocity, low-value electron cloud around the system.

Lattice interpretation

- LIBRA is dominant at Crown (CT-*) and outer user-facing nodes, especially along the Libra loop.

- Conceptually, LIBRA behaves like electrons:

  - highly mobile,

  - numerous,

  - responsible for most observed "current" in the economic field.

5.4 Inter-Token Relationships (within the lattice)

Putting it together in your 1H / MHD / 3-rail design:

- LIBRA (electron rail):

    - Flows mostly along outer surfaces and crowns,

    - Denser along equator and expansion nodes, especially where user gateways live.

- LITHIUM (proton rail):

    - Concentrated at inner + outer shells, especially Formation and Expansion nodes,

    - Represents slower, "heavier" mass: institutional, collateral, and credit.

- ORION (neutron rail):

    - Flows through binding points (selected FS/XS/CT nodes in its loop),

    - Aligns with equator crowns and governance nodes as a neutral stabilizing field.

In economic terms:

- ORION governs,

- LITHIUM anchors,

- LIBRA flows.

In geometric terms:

- Each rail wraps around the same 18-node lattice,

- Each rail hits every continent once per loop,

- Each rail experiences a different progression of stages (Formation → Expansion → Crown, in varied order),

- Together they form a three-phase, closed-loop, north–equator–south system aligned with your MHD / 1H-inspired layout.

6. Pool Ratios and Inter-Rail Relationships

At each Crown node (CT-XX), we imagine tri-asset pools in some variant of:

- LIBRA : LITHIUM : ORION

Initial conceptual ratios (per Crown):

- LIBRA: 60–80% of pool value

- LITHIUM: 15–30% as collateral spine

- ORION: 5–10% as governance ballast

Shell nodes (FS-*, XS-*) may host:

- bi-asset pools, e.g.:

    - LIBRA–LITHIUM for public → private flow

    - LIBRA–ETH or LITHIUM–ETH for global connectivity

- staking pools for LITHIUM and ORION with:

    - rewards tied to uptime, geographic role, and compliance with Orion-chain rules.

This creates a 3-phase economic system:

- LIBRA moves fastest, most widely.

- LITHIUM anchors and slows, providing weight and collateral.

- ORION stays focused on control, policy, and penalties/rewards.

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7. Physical & Theoretical Inspiration (1H, MHD, and Z-Plane)

OBEN is inspired by, but does not claim to replicate or violate, physical energy systems. The design motifs include:

- 1H Ice Lattice (Water)

  - Each node behaves like a 1H unit with 2 in / 2 out paths, mimicking the directional constraints of hydrogen bonding in ice structures.

  - The hexagonal arrangement of nodes echoes the 6-fold symmetry of certain crystal and field patterns.

- Magnetohydrodynamic (MHD) loops

  - The three rails act like three major magnetic flux tubes:

    - wrapping around a dipole planet,

    - anchored at effective poles (Alpha / Omega),

    - crossing higher and lower latitudes,

    - returning through equatorial neutral bands.

- Dipole + Equator Neutral Plane

  - CORE-ANT and CORE-SP play the conceptual roles of north / south poles of a global field.

- Crown nodes (CT-*) represent an equatorial "zero" plane, where opposite contributions meet, mix, and re-balance.

These analogies inform the topology, directionality, and balancing rules, but OBEN remains a crypto-economic and computational system, not a claim of physical zero-point energy extraction.

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8. Color Coding & Visualization

For clarity across diagrams, dashboards, and UI:

- Libra (electron rail)

    - Color: Blue / teal

    - Emphasis on crowns, user flows, public interfaces.

- Lithium (proton rail)

    - Color: Reds / oranges / warm

    - Emphasis on formation + expansion nodes and institutional flows.

- Orion (neutron rail)

    - Color: White / neutral, with:

        - cool accents over northern nodes,

        - warm accents over southern nodes,

        - soft mixed tones on equator crowns.

Hemispheres and bands can be shaded as:

- Northern nodes: cooler hues (blues / purples)

- Southern nodes: warmer hues (reds / oranges / yellows)

- Equator crowns: neutrals with a slight gradient, representing neutron / zero-plane behavior.

This gives a consistent visual language for field, particle, and geography.

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9. Implementation Overview (L2 + AWS Skeleton)

While the whitepaper focuses on concept, the initial implementation path is:

- Execution layer

  - L2 contracts on top of Ethereum (ERC-20 style tokens for LIBRA, LITHIUM, ORION).

  - Smart contracts for:

    - node registry (mapping NodeID ↔ address ↔ region),

    - pool management (AMMs / staking),

    - governance (on Orion rail).

- Node & infra layer

  - AWS EC2 instances mapped 1:1 to NodeIDs in OBEN_Master_NodeMap_v2.csv.

  - Tags and configuration reflect:

    - Sector (continent),

    - Hemisphere,

    - LatitudeBand,

- Stage (Formation / Expansion / Crown),

- assigned Rails.

- Access layer

  - Infura endpoints and MetaMask / wallet integration for LIBRA/LITHIUM/ORION,

  - L2 rollup or sidechain for actual chain operations,

  - Uniswap-style interfaces for public pools.

The AWS lattice serves as a real-world prototype implementing the topology that later appears in patents and whitepapers.

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10. Governance & Evolution

- Orion token holders control:

  - parameter updates for pools,

  - node onboard/offboard rules,

  - how Libra and Lithium bands are managed over time,

  - compliance modules for different jurisdictions.

- Upgrades follow:

  - Proposal → Orion-staked voting → delay → execution

    ensuring changes are transparent and globally coordinated.

- Future directions may include:

  - quantum-secure channels,

- ○ enhanced simulations of lattice behavior,

- ○ research into whether similar topologies in physical systems exhibit useful emergent properties.