

NorthernPay (NPY)

Tokenomics Review & Audit Report

Prepared for: NorthernPay / Northern Studios

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This report reviews the tokenomics and on-chain allocations for the NorthernPay (NPY) token. It summarizes the current supply, allocation by purpose, multi-signature treasury configuration, security observations, and recommended mitigations to reduce risk and improve transparency.

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1 Executive Summary

This report reviews the current tokenomics of NorthernPay (NPY), a Polygon-based ERC-20 token with an initial total supply of 2 120 000 000 (2.12 billion) NPY. The primary objectives of this review are to:

- Verify on-chain allocations and multi-signature custody arrangements.
- Quantify allocation percentages and present an allocation table.
- Identify key risks (centralization, liquidity, minting controls, vesting transparency).
- Provide actionable recommendations (governance, timelocks, vesting schedule, internal audit procedures).

Key findings (summary):

- On-chain multi-signature wallets have been created and received the token allocations as described by the whitepaper.
- Allocations appear consistent with the stated distribution (see [Section 4](#)).
- Primary risks: centralized control of minting (if mintable), potential sell-pressure without enforced vesting, and liquidity concentration in early stages.
- Recommended next steps: publish a formal Treasury Policy, implement timelocks for large disbursements, restrict minting capability to multisig with clear governance, and perform an internal audit by NorthernPay’s audit team with documented findings.

2 Scope and Methodology

2.1 Scope

This review covers:

- Token supply and allocation numbers provided by project owner.
- The multi-signature (2-of-3) safe addresses used to custody allocations.
- Basic protocol-level controls (minting/burning functions) as reported by the owner.
- High-level security and governance recommendations, and internal audit recommendations.

2.2 Methodology

1. Use the provided allocation table and wallet addresses as the authoritative source for distribution amounts.
2. Compute exact allocation percentages against total supply (2 120 000 000 NPY).
3. Identify control- and governance-related risks and propose mitigations that can be implemented on-chain and off-chain.

4. Recommend operational governance policies (timelocks, spending limits, vesting contracts).
5. Recommend and describe the scope and deliverables for an **internal audit** performed by NorthernPay’s audit team.

3 Total Supply and Summary Metrics

- **Total initial supply (deployed):** 2 120 000 000 NPY
- **Token standard:** ERC-20 (Polygon)
- **Contract source:** Created via Thirdweb (as indicated by project owner). Ensure the contract is verified on Polygonscan.
- **Mintable / Burnable:** Project states token contract supports minting and burning. *Recommendation:* restrict minting through multisig + governance (see Section ??).

4 Allocation Breakdown

The following table presents the on-chain allocations and computed percentages relative to the total supply (2 120 000 000 NPY).

Category	Safe Address (on-chain)	Amount (NPY)	Percent (%)
Main NorthernPay Treasury	0x8187cB.....c8393E7ADeD3a	318 000 000	15.00%
Community Fund	0xe0419EA46.....effEE7d0edB99D7	212 000 000	10.00%
Ecosystem & Dev Grants	0x97Ce5226E.....2658793D96d	524 900 000	24.75%
Team & Advisors	0x2fCecde9.....75937a08305F34c89	212 000 000	10.00%
Liquidity Reserves	0x99c07874Fc6.....242fAb558F2	317 990 000	15.00%
Merchant Incentives	0x458F8f70ef0e.....834A854Ff81	424 000 000	20.00%
Founder Personal Holdings	(Founder wallet)	111 000 000	5.24%
TOTAL		2 120 000 000	100.00%

Table 1: NPY allocation by category and associated safe addresses. Percentages computed relative to total supply of 2 120 000 000 NPY.

4.1 Observations

- Allocation percentages sum to 100% (within rounding tolerance).
- Significant allocations: Ecosystem & Dev Grants (24.75%) and Merchant Incentives (20%) are purpose-built for growth and adoption.
- Liquidity reserves and Main Treasury combine to 30.00% of supply, which gives the project significant latitude for market operations and ecosystem financing.

5 On-Chain Custody and Multisig Configuration

5.1 Multisig Setup

All provided safe addresses are controlled by multi-signature wallets (2-of-3). Multi-signature custody increases security compared to single-key storage. The following best practices should be enforced:

- Ensure multisig signers use hardware wallets (recommended).
- Keep signer identities documented off-chain and consider including a neutral third-party signer for governance transparency.
- Maintain redundancy and a secure signer rotation policy.

5.2 Addresses (for verification)

- Main NorthernPay Treasury: 0x8187cB01f7f2E18B1ad3e18AABbc8393E7ADeD3a (318,000,000 NPY)
- Community Fund: 0xe0419EA460A85Ed767b12ab3AeffEE7d0edB99D7 (212,000,000 NPY)
- Ecosystem & Dev Grants: 0x97Ce5226E89780Af087FA111cA15D2658793D96d (524,900,000 NPY)
- Team & Advisors: 0x2fCecde975937a0830E6695Cfd3C388135F34c89 (212,000,000 NPY)
- Liquidity Reserves: 0x99c07874Fc62860FA89e6aCAe3094242fAb558F2 (317,990,000 NPY)
- Merchant Incentives: 0x458F8f70ef0e0b0d370525CC5afd4834A854Ff81 (424,000,000 NPY)
- Founder personal (identified by project): 111,000,000 NPY

(Recommended action: publish Polygonscan links for each address in the public documentation so community members can verify balances in real time.)

6 Vesting, Lockups, and Release Schedules

6.1 Current Status

- The project has indicated that Team & Advisors allocations will be subject to vesting. Specific on-chain vesting details (contract addresses, cliffs, schedules) must be published for full verification.
- Some contributors proposed vesting terms (example: 12-month cliff, 3-year total vesting). These are advisory and should be codified on-chain or via a verifiable off-chain agreement.

6.2 Recommended Vesting Templates

1. **Team & Advisors (recommended):** 12-month cliff, linear monthly vesting over remaining 24–36 months. This reduces immediate sell pressure.
2. **Ecosystem & Dev Grants:** Disbursements governed by milestones with multi-sig approval; create dedicated grant contracts with release schedules tied to deliverables.
3. **Merchant Incentives:** Time-bound incentive pools that require merchant onboarding verification before token release.

7 Key Risks and Mitigations

7.1 Risk: Minting Privilege / Inflation

Issue: If the contract retains minting capability and the privilege is controlled by a single key, this is a high systemic risk.

Mitigation:

- Restrict minting capability to the multisig only (2-of-3).
- Require a governance vote or off-chain documented approval for any mint operation above a small threshold.
- Consider setting an absolute hard-cap on minting or requiring an on-chain timelock before minting becomes effective.

7.2 Risk: Concentration of Supply & Sell Pressure

Issue: Large allocations (e.g., Ecosystem grants, Merchant incentives) can create sizable sell pressure if unlocked or used without controls.

Mitigation:

- Implement vesting schedules and weekly/monthly sell limits per holder for team/advisors.
- Use on-chain vesting contracts that are public and transparent.
- Require multi-sig approvals and a public announcement mechanism before large disbursements.

7.3 Risk: Liquidity Management

Issue: Early-stage projects with small active liquidity are highly sensitive to trades; a single swap can move price drastically.

Mitigation:

- Maintain liquidity in the multisig treasury (not personal wallets).
- Gradually increase the stablecoin side of pools to present balanced liquidity.
- Consider partial locking of LP tokens for an initial period while keeping a small unlocked buffer for operational flexibility.

7.4 Risk: Governance Transparency

Issue: Absent public governance policies, community trust is limited.

Mitigation:

- Publish a Treasury Policy (spending limits, approval workflow, publication cadence).
- Commit to regular treasury reports (monthly).
- Provide an on-chain governance record (e.g., proposals and multisig transaction hashes).

8 Internal Audit: Scope & Recommendations

NorthernPay intends for the audit to be performed **internally** by the NorthernPay Internal Audit Team. The internal audit should be documented, reproducible, and published to ensure community trust. The recommended scope and deliverables are:

8.1 Audit Scope

- **Code review:** Examine the deployed ERC-20 contract (mint/burn functions, owner/admin roles, access control).
- **Access Privilege review:** Verify who holds admin roles, and ensure roles are minimized and transferred to multisig where appropriate.
- **Vesting Timelocks:** Review any vesting/vesting-helper contracts and timelock mechanisms.
- **On-chain allocation verification:** Cross-check reported allocations with Polygonscan balances for each safe address.
- **Operational processes:** Document internal procedures for multisig signing, treasury disbursements, and emergency handling.

8.2 Audit Deliverables

- **Internal Audit Report (Detailed):** A formal PDF describing findings, code excerpts, identified issues, severity ratings, and remediation steps.
- **Remediation Plan:** For each identified issue, a timeline and responsible owner to remediate.
- **Public Summary:** A community-facing summary (1-2 pages) highlighting key findings and confirmations (e.g., allocations verified, mint role moved to multisig).
- **Artifacts:** Signed internal checklists, transaction hashes used for verification, and links to Polygonscan for reproducibility.

8.3 Internal Audit Best Practices

- Use independent internal reviewers (team members not directly responsible for the code they audit).
- Maintain a public changelog of audit findings and fixes.
- After internal audit completion, consider a later third-party audit for additional credibility (optional).

9 Governance and Treasury Policy (Recommended Draft)

The project should publish a Treasury Policy that includes:

- **Spending thresholds:** e.g., any spend >\$1,000 requires a public proposal and 2-of-3 multisig approval; spends >\$25,000 require timelock + multisig + community notification.
- **Reporting cadence:** monthly treasury reports (on-chain snapshots + CSV summary).
- **Use of funds:** defined categories (marketing, listings, dev grants, merchant incentives).
- **Emergency provision:** a small emergency fund with pre-authorized signers and strict documentation.

10 Smart Contract Security Recommendations

1. **Internal Audit:** Conduct a formal internal audit performed by NorthernPay's Internal Audit Team covering access control, mint/burn paths, vesting logic, and multisig integration. Produce a detailed internal audit report and a public summary for community verification.
2. **Ownership and Admin Keys:** Do not renounce ownership until robust governance and timelocks are implemented. Prefer moving admin keys to multisig + timelock.
3. **Timelocks:** Implement a timelock (e.g., 48–72 hours) for multisig-executed critical functions (large transfers, minting) to allow community review.
4. **On-chain Vesting Contracts:** Use vetted vesting contracts (e.g., OpenZeppelin's TokenVesting patterns) for team/advisors and grant schedules.

11 Transparency Checklist (to publish immediately)

- Publish Polygonscan links for token contract and each safe address.
- Publish the Treasury Policy and vesting schedules (public GitHub or website).
- Publish multisig signer identifiers (off-chain identity or role, not necessarily personal identifying info if privacy required).

- Publish the internal audit report (detailed) and the public summary.
- Provide live links to liquidity pools (GeckoTerminal, Uniswap/Quickswap pool link).

12 Operational Recommendations and Roadmap

1. Immediate (0–2 weeks):

- Publish the Treasury Policy and vesting schedule.
- Move LP tokens into the multisig (if not already) and announce publicly.
- If minting is enabled, move mint role to multisig or implement a multi-sig enforced mint gate.
- Begin the internal audit (see Section 8) and prepare the public summary.

2. Short-term (2–8 weeks):

- Complete the internal audit and publish results and remediation plan.
- Implement timelock contracts for significant treasury disbursements.
- Start staged liquidity growth campaign (crowdfund for USDT side) with on-chain proof to reach listing thresholds.

3. Medium-term (2–6 months):

- Apply / re-apply to CoinGecko and CoinMarketCap with proof of liquidity and published internal audit.
- Consider partial locking of LP tokens via a trusted locker once liquidity is substantial.
- Implement a transparent grant application process for Ecosystem funds.

13 Mathematical Appendix: Key Metrics & Formulas

13.1 Percentage Calculation

Given total supply $S = 2,120,000,000$ NPY, the percent for allocation A_i is:

$$\text{Percent}_i = \frac{A_i}{S} \times 100\%$$

Example: Main Treasury $A_{treasury} = 318,000,000$

$$\text{Percent}_{treasury} = \frac{318,000,000}{2,120,000,000} \times 100\% \approx 15.00\%$$

13.2 Market Cap (example)

If a circulating supply C at a given time and market price P (USD per NPY) are known:

$$\text{Market Cap} = C \times P$$

(Example numbers would require a verified circulating supply and price feed.)

14 Appendix: Quick Reference

14.1 Token / Contract

- Contract Address (Polygon): 0xa6cC027c3Bba1793B53b626974Ba1f38321F356b
- Total Supply: 2 120 000 000 NPY

14.2 Safe Addresses and Allocations (repeat)

- Main NorthernPay Treasury: 0x8187cB01f7f2E18B1ad3e18AABbc8393E7ADeD3a — 318 000 000 NPY (15.00%)
- Community Fund: 0xe0419EA460A85Ed767b12ab3AeffEE7d0edB99D7 — 212 000 000 NPY (10.00%)
- Ecosystem & Dev Grants: 0x97Ce5226E89780Af087FA111cA15D2658793D96d — 524 900 000 NPY (24.75%)
- Team & Advisors: 0x2fCecde975937a0830E6695CfD3C388135F34c89 — 212 000 000 NPY (10.00%)
- Liquidity Reserves: 0x99c07874Fc62860FA89e6aCAe3094242fAb558F2 — 317 990 000 NPY (15.00%)
- Merchant Incentives: 0x458F8f70ef0e0b0d370525CC5afd4834A854Ff81 — 424 000 000 NPY (20.00%)
- Founder Personal Holdings: (Founder wallet) — 111 000 000 NPY (5.24%)

15 Concluding Remarks

NorthernPay has taken important steps to implement on-chain allocation transparency by distributing large allocations into multi-signature wallets. Implementing the internal audit and publishing its results will materially increase community trust and provide a documented basis for subsequent external validation and listings. To further reduce risk and maximize the likelihood of positive listing outcomes (CoinGecko / CoinMarketCap) and community trust, the project should:

- Publish a clear Treasury Policy and vesting schedules on the official website.
- Move critical administrative privileges to a multisig and/or timelock.
- Require audited vesting contracts for team/advisor allocations.
- Complete and publish the Internal Audit report and public summary.
- Implement staged liquidity growth and partial LP locking as liquidity increases.

Prepared by: NorthernPay Internal Audit Team

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