White Paper V2.0

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Introduction

BNPL Pay intends to disrupt the global credit markets by creating a unique under-collateralized lending protocol. The protocol will allow users to borrow funds through its system of distributed P2P lenders run natively on the Ethereum blockchain.

With the advent of blockchain technology, the credit markets have already undergone massive disruption. Currently, within the decentralized finance (DeFi) and Ethereum ecosystems, the collateralized lending space has exploded, with relatively new protocols such as AAVE reaching ten figures in liquidity and borrowing. However, current protocols only support collateralized loans, limiting their users to only those with sufficient collateral.

On the other hand, the under-collateralized lending sector has yet to be explored, and we believe this multi-trillion-dollar industry is ripe for disruption. For example, upcoming Buy Now Pay Later companies currently pay anywhere from 12% to 15% interest rates to traditional lenders, despite nominal default

rates. By bridging these industries with the DeFi space, many synergies could be unlocked, allowing both DeFi yields to become more sustainable and traditional finance (TradFi) credit to become more abundant. However, complexities imposed by credit and counterparty risk remain inherent within such arrangements.
We believe the highest demand for credit comes from those who cannot meet the requirements to take on collateralized loans. To that end, we have created the BNPL Pay Protocol, an under-collateralized lending platform that services this need. We tackle the counterparty risk associated with under-collateralized borrowing through a distributed network of Borrower Nodes.

Our system delegates the tasks of credit checks, risk assessment, and other due diligence requirements to pool operators, creating a set of incentive structures that reward effective operators and punish ineffective ones.

Borrower Nodes manage pools of liquidity and have the autonomy to delegate these funds to potential borrowers according to parameters they see fit. Lenders choose an operator that matches their risk-reward preferences to conduct interest-bearing activities based on fully transparent data.
Borrowers can apply for credit from any (or all) Banking Nodes and, if approved, are issued loans on fully customizable, agreed-upon terms.

PROTOCOL OVERVIEW

There are four key stakeholders within the BNPL Pay Ecosystem:

- Borrower Nodes
- Lenders
- Borrowers
- Token Stakers
- Protocol Operator

1. Borrower Nodes

Borrower Nodes create and operate a pool of liquidity that is delegated to them from lenders. They decide how the capital is best utilized and are responsible for tasks such as assigning credit limits, interest rates, and other terms to prospective borrowers. Borrower Nodes broadcast all prior transactions and lending history, summarized into easy-to-understand metrics. This transparency helps both Lenders and Borrowers determine which node to engage with.

To set up a Borrower Node, an individual or entity must stake and lock a set valuation of BNPL tokens. Node operators accrue 2.5% of the interest portion of payments made by borrowers of their pool, plus additional staking rewards. Anyone willing to bond the set amount of BNPL tokens may set up a Borrower Node and attract a portfolio of Lenders, thus creating a free-market system that encourages competition.

Note that in order to be listed on the BNPL Pay official marketplace and attract funding, further diligence and Know Your Customer (KYC) forms will need to be submitted and accepted on behalf of the operator of the protocol.

2. Lenders

Lenders are any protocol participants that choose to delegate capital to a Borrower Node. Within the protocol, Lenders can see a transparent, on-chain record of each node operator's performance, including:

- Total capital managed
- Interest accrued
- Average APY
- Total default loss

Additional detailed procedures provided by the node operator.

Lenders receive 75% of the interest payments made by Borrowers (plus principal repayments) and also earn BNPL token emissions from the protocol's liquidity mining program. These token emissions are distributed proportionately based on each Lender's share of the total liquidity on the platform.

3. Borrowers

Borrowers apply for loans from Banking Nodes. They can apply to multiple pools at no cost and are subject to the Borrower Nodes' due diligence processes, such as KYC requirements and credit checks. Approved Borrowers are issued loans on fully customizable terms (maturity dates, interest rates, repayment frequency, etc.). Borrowers are encouraged to maintain good repayment histories, as all loan records are stored on-chain—impacting their future ability to access credit within the BNPL Pay ecosystem.

Note that a Borrower Node can itself be a borrower and may also be the sole borrower within a given Borrower Node.

4. Stakers

Stakers are any protocol participants that hold BNPL tokens and wish to delegate (stake) them to a Banking Node. This "soft vouch" for the Borrower Node entitles Stakers to 12.5% of the interest income (converted into BNPL tokens) from that pool. In the event of a default, Stakers share in the same penalty as the operator, with a percentage of staked tokens "slashed" proportional to the size of the default relative to the total pool capital.

A higher BNPL stake in a particular pool provides Lenders with added confidence, as there is more collateral available to cover potential losses. Additionally, Stakers have the opportunity to play an active role in protocol governance, where decisions such as protocol parameters and changes are voted on by those who stake their tokens.

5. Protocol Operator

The Protocol Operator is the entity responsible for creation, maintenance and growth of the intellectual property and associated credit market place of BNPL Pay. This entity is also responsible for assuring auditing of smart contracts, business development and enacting governance decisions. 10% of the interest income from all Borrower Nodes accrues to the Protocol Operator.

BORROWER NODE OPERATORS

Unlike established protocols in DeFi, under-collateralized borrowing presents an entirely new avenue of risk: counterparty risk. BNPL Pay addresses this by delegating tasks such as credit checks and risk assessment to node operators, who lie at the heart of the protocol.

Becoming a Borrower Node Operator

Any entity can create a Borrower Node, become its operator, and have full autonomy over the lending operation. They are required to lock up a specified amount of BNPL tokens, creating a vested interest in the protocol and demonstrating commitment to their responsibilities. This design fosters an open and competitive environment for lending institutions to operate in—more open than traditional (TradFi) alternatives.
Borrower Node operators compete with one another for both:

- Capital (from Lenders)
- Loan requests (from Borrowers)
- Ultimately, the BNPL protocol aims to empower Borrowers with better financing options and more competitive rates than legacy systems.

Pool Initiation and Termination

To set up a Banking Node, no formal application is required—users simply lock a set value of BNPL tokens into a bonding contract. These tokens remain locked

until the node is terminated. An operator can terminate a node only when all outstanding loans have matured. At that point:

- No new loans can be initiated
- No new capital can enter the pool
- All pool assets become withdrawable by Lenders
- The bonded BNPL tokens become withdrawable by the operator

Operator Responsibilities

The most common responsibility for a Borrower Node Operator is to manage its book of credit obligations effectively and repay as per the agreed terms with the pool of lenders. In many cases the Borrower Node itself will be the only entity borrowing capital on the BNPL Pay Protocol.

However Borrower Node Operators can accept other third party borrowers and in this case responsibilities could include: evaluating Borrower applications, performing due diligence/credit checks, and assigning interest rates, credit limits, and other terms based on assessed creditworthiness and risk. Loans feature flexible smart contract terms, including maturity dates, repayment types, penalty structures, and more.

All loans—both outstanding and completed—are recorded transparently on-chain, creating an immutable history of activity. Lenders can review these records to decide which Banking Node(s) they trust with their capital. BNPL Pay will build user-friendly dashboards to help Lenders understand key metrics like interest accrued, default rates, and total liquidity managed by each node.

Incentive Structure

The BNPL token's incentive structure aims to reward effective operators and penalize ineffective ones:

Revenue Share: A percentage of interest payments (initially 10%) goes to the Protocol Operator. This share is paid out upon loan maturity.

Staking Rewards: An additional 12.5% of interest is allocated to Stakers in each pool (converted into BNPL), while 2.5% goes to the specific Borrower Node and the remaining 75% of interest goes to Lenders.

Slashing Fees

Slashing occurs when a loan defaults, causing a capital loss in the lending pool. The loss percentage (relative to the pool size) determines the slashing percentage of both the Node Operator's bonded tokens and the Stakers' delegated tokens.

Example: A 5% default causes a 5% slash of bonded/staked BNPL.

Slashed tokens are sent to a redemption address and claimable by Lenders to offset losses. If a Node Operator's bonded token balance falls by 25% (from the agreed minimum amount at the time), their lending pool enters probation—no new loans or lenders until the stake is topped back up to the required value of BNPL.

Defaults

A loan is considered in default if delinquent for over 72 hours. The outstanding principal at that time becomes a realized loss for the pool. The default triggers slashing, and Lenders receive the slashed BNPL proportionally to their contribution.If a Borrower eventually repays after a default is declared, the recovered funds are sent to a redemption address so Lenders (who were slashed) can return the slashed tokens. Lenders have a 90-day window to redeem these returned funds; otherwise, unclaimed amounts revert to the Node Operator.

LENDERS

BNPL Pay levels the playing field by letting Lenders participate in traditional credit markets via the blockchain. Lenders benefit from transparency and can choose which Banking Node best matches their risk-return appetite.

Liquidity Mining

Since Lenders are crucial to the protocol's success, 20% of the BNPL total token supply is allocated to them via a liquidity mining program. Lenders earn:
Interest from borrowers (paid in the underlying deposit currency).

BNPL token emissions from the protocol's reward schedule.

Full Capital Utilization

Any unused (idle) liquidity in the pool is deployed into vetted DeFi lending protocols (e.g., AAVE) to earn additional yield. This ensures Lenders benefit from consistent returns, even if under-collateralized loan demand fluctuates. Both the BNPL DAO and individual Node Operators will choose which protocols are whitelisted and used.

Interest Accrual Methodology

Under-collateralized Loans: Interest is realized each time a Borrower makes a repayment (principal + interest). The principal portion re-enters the pool, while the interest portion directly increases the pool value, boosting the net asset value (NAV) for Lenders.

Collateralized Lending Platforms: Idle capital deployed to external DeFi protocols accrues interest continuously (on a block-by-block basis).

Lending and Redemption

When a Lender commits capital (e.g., USDT) to a Banking Node, they receive bnUSD tokens (pool receipts) at a 1:1 exchange rate at inception. As interest accrues, the bnUSD:USD ratio increases; if defaults occur, it decreases.

Redemption: Lenders can redeem bnUSD for the underlying asset at any time, subject to available liquidity. If the pool is fully deployed, they must wait for new funds or loan repayments. Alternatively, bnUSD could be traded in secondary markets if available.

Borrowers

Borrowers are the target customers of BNPL Pay. They submit loan requests to various Borrower Nodes, undergo due diligence (KYC, credit checks, etc.), and can choose the most favorable terms on offer.

Loan Contract Terms

Each loan is a customizable smart contract specifying maturity dates, interest rates, payment schedules, penalties, and more. BNPL Pay provides standard templates, but new templates can be introduced via BNPL governance if the DAO approves.

Borrower Request Hub

BNPL Pay's platform includes a request hub where Borrowers can post loan requests for all Borrower Nodes to review. Node Operators may respond with tailored proposals, or Borrowers can apply directly to individual nodes. This marketplace approach creates competition and helps Borrowers secure optimal terms.

Stakers

Stakers take on both a passive (vouching for a Banking Node) and an active (governance) role in the protocol. Staked tokens are crucial to mitigating Lender risk and guiding the future of BNPL Pay.

Vouching

By staking BNPL tokens in a Banking Node, a Staker effectively endorses that Node Operator's reliability. Stakers earn a share of 20% of the pool's interest income (automatically converted into BNPL) but share in any losses through slashing.

Unstaking Period: When withdrawing staked tokens, there is a 7-day waiting period during which no rewards are earned, but slashing penalties can still apply.

Staked Assets to Liquidity (SATL) Ratio

A pool's risk profile depends partly on the ratio of staked BNPL tokens (by market value) to the total liquidity in the pool:

$$SATL\ Ratio=(Total\ BNPL\ Staked)\times(Market\ Price\ of\ BNPL)Total\ Liquidity\ in\ the\ Pool$$

$$SATL\ Ratio=$$

$$TotalLiquidityinthePool$$

$$(TotalBNPLStaked)\times(MarketPriceofBNPL)$$

SATL Ratio=Total Liquidity in the Pool(Total BNPL Staked)×(Market Price of BNPL)
Higher SATL Ratio → More protection for Lenders in the event of default.
Lower SATL Ratio → Fewer stakers in the pool, thus higher yield potential for each staker.

This free market approach allows capital to flow toward the best risk-reward opportunities.

Governance

All staked BNPL tokens (including those used by Node Operators) carry voting rights in the protocol's DAO. Stakers without interest in vouching may also stake purely for governance.
Upon launch, parameters—such as revenue splits, default thresholds, and more—are adjustable through governance proposals. The BNPL DAO will shape the protocol's evolution as it seeks to become a fully decentralized base layer for any credit facility.

EXAMPLE OF BNPL PAY AT WORK

With multiple Banking Nodes running, a Borrower can apply for a loan from any of these nodes. Lenders and Stakers can choose any node (or multiple nodes) to lend stablecoins or stake BNPL tokens—or do both.
Let's consider:

- Banking Node 1
- Total Liquidity in the Pool: $5,000,000
- BNPL Tokens Staked: 1,000,000
- BNPL Tokens Bonded by the Operator: 5,000,000
- BNPL Token Price: $1.00
-

Hence, the SATL Ratio (Staked Assets to Liquidity) is calculated as:

```
bash
CopyEdit
(Total BNPL Staked + Bonded) x BNPL Price ÷ Total Pool Liquidity
= (1,000,000 + 5,000,000) x $1.00 ÷ $5,000,000
= 6,000,000 ÷ 5,000,000
= 1.2
```

(Note: The text sample previously used 1,000,000 staked + 5,000,000 bonded but then suggested an SATL Ratio of 0.4 for a different scenario; this example may vary depending on final token distribution and price.)

Each Lender in this pool receives a bnUSD token representing their share of the pool. Initially, 1 bnUSD = 1 USD when the pool is formed. As interest accrues or defaults occur, this ratio fluctuates.

Scenario Setup

Borrower: John

Runs a small Buy Now Pay Later (BNPL) company - Needs $100,000 in financing.

John's Loan Application:

John applies to Banking Node 1 and undergoes the node's due diligence. The Node operator approves his request:

- Loan Amount: $100,000
- APR (Interest Rate): 10%
- Repayments: Monthly
- Term: 3 years (36 months)
- Loan Disbursement:

After approval, $100,000 leaves the liquidity pool, which then holds $4,900,000 in available capital plus a $100,000 receivable asset. The total pool value remains $5,000,000, keeping bnUSD = 1 USD.

Monthly Installments:

John's monthly payment is $3,226.72, totaling $116,161.92 over 36 payments. Each installment has two parts—Interest + Principal.
Principal portion re-enters the pool.
Interest portion increases the pool's net asset value and is split among Lenders, Stakers, and the Node Operator.

Scenario 1: Full Repayment

If John makes every payment on time for the full 36 months, the pool's value increases by the total interest paid:

- Principal Repayment ($100,000) simply returns to the pool.
  Interest Repayment (36 payments x ~$322.67 interest portion monthly ≈ $16,161.92 total interest).

- 75% of interest ($~12,121.44) accrues to the liquidity pool for Lenders.
-
- 12.5% of interest ($~2,020.24) is converted to BNPL and distributed to Stakers.
-
- 10% of interest ($~1,616.19) is allocated to the Protocol Operator (claimable at loan maturity).
-
- 2.5% of interest ($~404.05) is allocated to the Borrower Node Operator (claimable at loan maturity).

As this interest flows in, the **bnUSD:**USD ratio rises above 1, reflecting an increase in the pool's total value. Lenders, Stakers, and the Operator each realize gains.

Scenario 2: Default

If John defaults on his second payment (i.e., 72+ hours overdue), the $100,000 principal (minus any repaid portion) is recorded as a realized loss for the pool: The outstanding loan balance is written off as a loss.

A slashing event occurs. The proportion of BNPL tokens (bonded by the Operator + staked by others) is "slashed" in line with the default's size relative to the pool's total liquidity.

The slashed tokens go into a redemption address, claimable by Lenders to offset a portion of their principal loss.

If John repays later (after default was declared), those funds are also sent to the redemption address. Lenders who were slashed can return their slashed BNPL to the Operator and reclaim the principal. Any unclaimed funds after 90 days revert to the Node Operator.

RISK DISCLOSURE

The BNPL Pay protocol (“Protocol”) is a set of smart contracts made available on an “as-is” and “as-available” basis. It is not a service of any kind, and no one should rely on BNPL Pay to assist in evaluating the Protocol, assessing its fitness for any particular purpose, or complying with any requirements. Every participant assumes all risks arising from interactions with the Protocol. BNPL Pay has no liability for any claim, damages, or other liability—whether in contract, tort, or otherwise—arising from or in connection with use of the Protocol.

Potential Risks include, but are not limited to:

- Partial or total loss of virtual assets
- Collapse in liquidity with respect to virtual assets
- Changes in the smart contracts or the compatibility of a virtual asset with the Protocol
- Regulatory uncertainty or government action against virtual assets
- Market volatility leading to extreme price fluctuations
- Market misconduct by participants (e.g., market manipulation, front-running, trading on non-public info)
- Delays or failures in transaction confirmation
- Counterparty risk

- Technological vulnerabilities (e.g., hacks, exploits, errors, forks, phishing, sybil attacks, distributed denial of service, malware, double-spend attacks)
- Loss of private keys
- Misinformation campaigns

This list is not exhaustive and is not intended to capture all possible risks. In the event of any of the above, your assets may be lost entirely. Participants should carefully consider each risk, assess their risk appetite, and consult independent advisers before participating in the BNPL Pay Protocol.