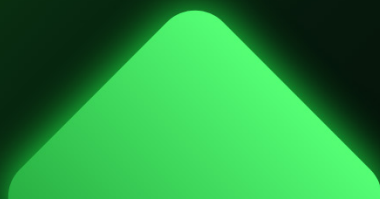


Green Planet

The first decentralized money market with discount levels powered by GAMMA

Version 1.0 - Oct 2021

GAMMA
is the highest
form of energy
in the universe.





Abstract

This green paper will outline the new decentralized lending and credit protocol known as the Green Planet and the new utility token GAMMA. The lending and credit protocol will algorithmically set interest rates based on supply and demand of over-collateralized cryptocurrencies and stable coins operating on the Binance Smart Chain^[1]. The GAMMA utility token will serve as an incentive for users to supply and borrow assets on the Green Planet as well as offer a discount to platform fees by holding and staking the GAMMA token.



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1.0 Introduction

The Green Planet lending and credit protocol is designed to be a complete decentralized money market that compliments the existing Planet Finance DeFi ecosystem. The protocol was originally forked using Compound^[2] and synced with the GAMMA utility token for algorithmic discounts to be automatically applied for both lenders and borrowers who hold and stake GAMMA.

1.1 Problem:

Two major problems exist in current decentralized money markets that the protocol will aim to address:

- 1.** No complete DeFi ecosystem currently exists that encompasses an AMM, an aggregator and a money market in one. Users with various DeFi strategies currently need to use multiple protocols with difficult user journeys, overcomplicating the process, particularly for new users to DeFi.
- 2.** Currently the tokens used to incentivize users to DeFi money markets offer tokens with little to no utility. In Centralized Finance (CeFi) protocols such as Crypto.com^[3], Nexo^[4], Celsius^[5] or the Binance CEX^[6], the native platform token is used to offer either discounts to fees or increased interest rates.

1.2 Solution:

The GAMMA utility token will offer discount levels to both suppliers (increased lending APY) and borrowers (decreased borrowing APY) when staked on Planet Finance. This will give utility to the GAMMA token from day one as users look to increase their APY's through staking more GAMMA.

To make the user experience as simple as possible, three tiers of GAMMA staking levels relating to increasing discount rates have been created:

Level 1 will include a 5% discount to protocol fees

This will apply when 1% to 4.9999% of the total assets supplied on a USD basis on the Green Planet are staked in GAMMA.

Level 2 will include a 20% discount to protocol fees

This will apply when 5% to 9.9999% of the total assets supplied on a USD basis on the Green Planet are staked in GAMMA.

Level 3 will include a 50% discount to protocol fees

This will apply when 10% or more of the total assets supplied on a USD basis on the Green Planet are staked in GAMMA.

	Level 1	Level 2	Level 3
GAMMA % Staked	1%-4.9999%	5%-9.9999%	10% plus
Discount Level	5%	20%	50%

The Green Planet Lending protocol will complement the Planet Finance ecosystem. Users will be able to swap assets, make liquidity pools, stake assets, supply assets and borrow assets all in the one protocol.

This will simplify the user experience allowing users to connect their wallet to one protocol (Planet Finance) with the highest utility of all DeFi protocols in one application.

To further utilize assets on Planet Finance, single assets staked on the aggregating planets (Blue, Red & Uranus), will automatically be supplied on the Green Planet Protocol. This will further optimize the assets staked on Planet Finance to allow those assets to be borrowed to earn further interest.

2.0 GAMMA Utility Token

2.1 Gamma Distribution and Release Rate:

The Green Planet utility token GAMMA will initially be airdropped to all AQUA holders at a rate of 50:1. After the airdrop and when the Green Planet is live it will be released at a rate of 100,000 GAMMA per day until 100,000,000 has been distributed. The 100,000 GAMMA released per day will be distributed in the channels below:

- 1.** Green Planet Lending Protocol: 45,000 per day. For Borrowers and Lenders.
- 2.** Blue/Red/Uranus Vaults: 41,500 per day. For liquidity providers in vaults across the planets.
- 3.** Planet Finance Foundation: 10,000 per day.
- 4.** Affiliates: 2,500 per day.
- 5.** NFT Platform: 1,000 per day.



Planet Finance

Tokenomics

Planet Finance

Tokenomics



Governance

Token Type

500/day

Emission: 200 Days

100,000

Max Supply



Utility Token

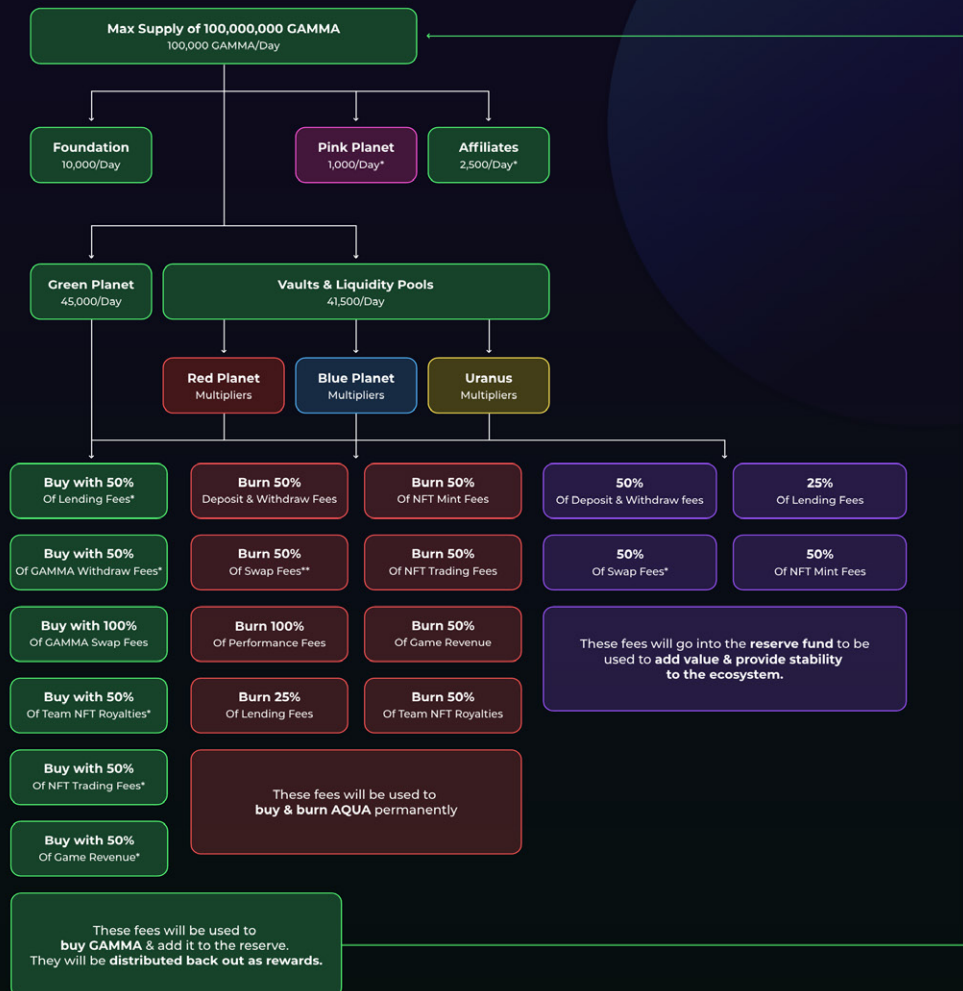
Token Type

100k/day

Until MAX Supply

100,000,000

Max Supply



An initial liquidity pool for GAMMA will be launched with AQUA (AQUA-GAMMA LP), to allow users to swap GAMMA on Planet Finance's AMM.

Any GAMMA allocated to a distribution channel that is not live at the launch of the Green Planet, will go into the reserve fund until the feature is launched.

2.2 GAMMA Utility on the Green Planet:

The Green Planet will regularly calculate users stake ratio in USD terms, whereby the stake percentage ratio will apply one of four discount rates: 0%, 5%, 20% and 50%. These discount rates will be calculated and applied to every block the user is supplying and or borrowing assets on the Green Planet.

This discount rate will then be deducted from the interest rate curve model to boost yields when staking (normal supply interest rate + discount rate) and decreasing lending rates when borrowing assets (normal borrow interest rate – discount rate).

The discount rate will be deducted from the protocol fees and will not impact supply rates for users adding liquidity to the protocol.

2.3 GAMMA Utility On the Pink Planet and Games:

GAMMA will also be the utility token on the upcoming Pink Planet with various use cases.

2.4 GAMMA Tokens Bought by Planet Protocol Fees:

The following fees generated by the Planet Finance protocol will be used to buy GAMMA

- 1.** 50% of Lending Fees
- 2.** 50% of GAMMA withdraw fees from staking on Planet Finance vaults
- 3.** 100% of Trading Fees where GAMMA is Swapped.
- 4.** 50% of NFT royalty fees
- 5.** 50% of NFT drops and trade fees
- 6.** 50% of Game Revenue

GAMMA tokens bought will be held in a reserve and staked on the Green Planet through a smart contract that will be used to reward users on Planet Finance when all 100,000,000 GAMMA tokens have been completely minted.

After 100,000,000 GAMMA has been initially released, the GAMMA purchased and put in the reserve will start to distribute.

The release amount will be subject to how much was purchased on the market during the original distribution, and what percentage of bought GAMMA the community votes on to distribute using the AQUA governance token.

This process will continue in 100 day intervals, where bought GAMMA using protocol fees will continue to grow the reserve and then be released over 100 day intervals voted on by AQUA holders. This process will allow the protocol to remain sustainable by only using the protocol fees to release further GAMMA rewards to the Planet Finance ecosystem.

3.0 Green Planet Protocol

The Green Planet protocol is a decentralized lending and credit market that uses the Binance Smart Chain. The protocol holds pooled assets with algorithmically derived interest rates based on market supply and demand. This model ensures there is no counterparty risk, no maturity risk and no negotiations required.

All transactions are recorded on the publicly transparent ledger enabling users to inspect all current and past transactions and interest rates.

The Green Planet protocol is governed by the AQUA token, where all future decisions can be voted on here <https://vote.planetfinance.io>

3.1 Supply Assets:

Users can supply cryptocurrencies and stable coins on the Green Planet to use as collateral for loans and earn interest from other users borrowing the funds. Users also earn extra rewards in the form of GAMMA tokens for supplying assets.

Users will earn a floating interest rate that will vary depending on the asset supplied and the utilization rate of that asset (how much is borrowed as a percentage of how much is supplied).

All user assets supplied are pooled in a smart contract to allow for users to withdraw assets at any time. The interest rate model ensures that when the utilization rates approach 100% the interest rate increases significantly to ensure borrowers return their liquidity back into the protocol ensuring that suppliers will be able to withdraw their assets.

Assets supplied to the market create gTokens (BEP20), which gives the asset holder ownership of an ever-increasing quantity of the underlying asset (as interest accrues). The gTokens are always convertible into the underlying asset by burning the gToken.

3.2 Borrow Assets:

When users want to borrow supported cryptocurrencies and/or stablecoins on the Green Planet they must first deposit crypto assets to use as collateral. All loans are over collateralized meaning the amount available to borrow will always be lower than 75% of the collateral provided.

This percentage may vary depending on the particular assets supplied. Volatile assets with less liquidity will have lower collateral factors, while proven stable coins will have the highest collateral factor. The collateral ratios will be initially set, but can be voted on and changed using the AQUA governance token.

The gTokens minted when supplying assets are used as collateral and the sum of the value of all underlying gTokens multiplied by each assets collateral factor equals the users maximum borrow capacity.

This ensures that there is always a healthy buffer between the amount a user has supplied as collateral and borrowed.

In the event where the collateral value significantly drops with respect to the borrowed assets and/or the user does not repay the borrowed assets, this buffer ensures the protocol and users supplied assets are protected.

3.3 Risk and Liquidation:

If a user's account exceeds the borrowing capacity, a portion of the outstanding debt can be paid by a liquidator in exchange for some of the gTokens collateral. Liquidators are incentivized to pay the outstanding gTokens by getting up to 10% of the users collateral. This incentive will ensure that arbitragers are securing the system by reducing the borrower's exposure and ensuring there is a healthy buffer for the protocol and supplier.

3.4 Interest Rate Model:

The Green Planet Protocol utilizes an interest rate model that has been created per asset that changes depending on supply and demand. The protocol is designed to maximize the utilization rate

of each underlying asset by 1) having a competitive interest rate per asset with respect to other lending protocols and 2) an interest rate curve that consistently updates depending on the utilization percentage (amount borrowed versus supplied).

Further details on the interest rate model per asset with respect to varying utilization rates can be found in the docs folder (<https://docs.planetfinance.io/>).

3.5 Chainlink Price Feeds:

The Green Planet will implement Chainlink price feeds to maintain the current exchange rate of each supported asset. This is critical to ensure that the correct price of all listed assets on the Green Planet represent the actual market price and cannot be manipulated. Furthermore, this will ensure the correct borrowing and collateral ratios are as accurate as possible for the protocol at any given time.

3.6 Governance:

The Green Planet and entire Planet Finance ecosystem is governed by the AQUA token. Governance will include the ability to add and remove cryptocurrencies and stable coins listed on the Green Planet, adjust the interest rate model and collateral ratios, and more.



4.0 Conclusion

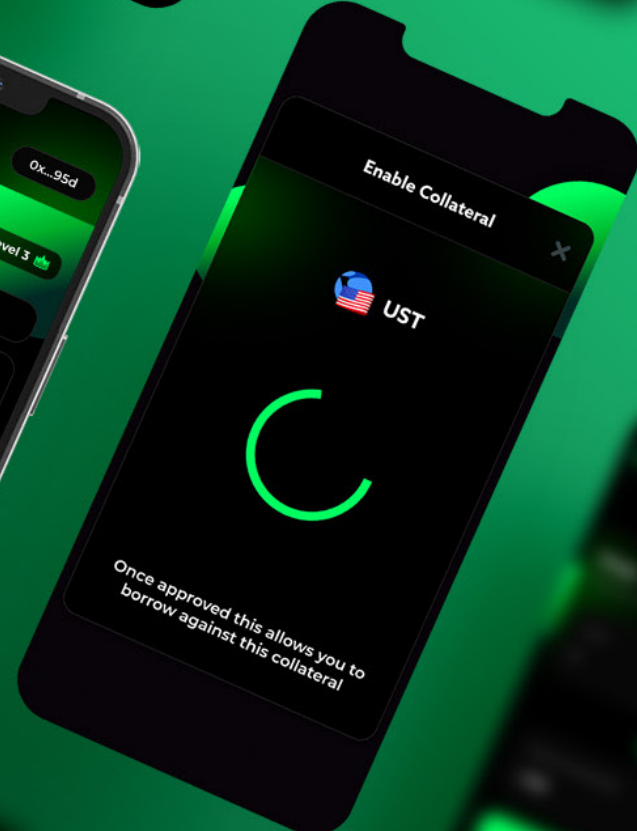
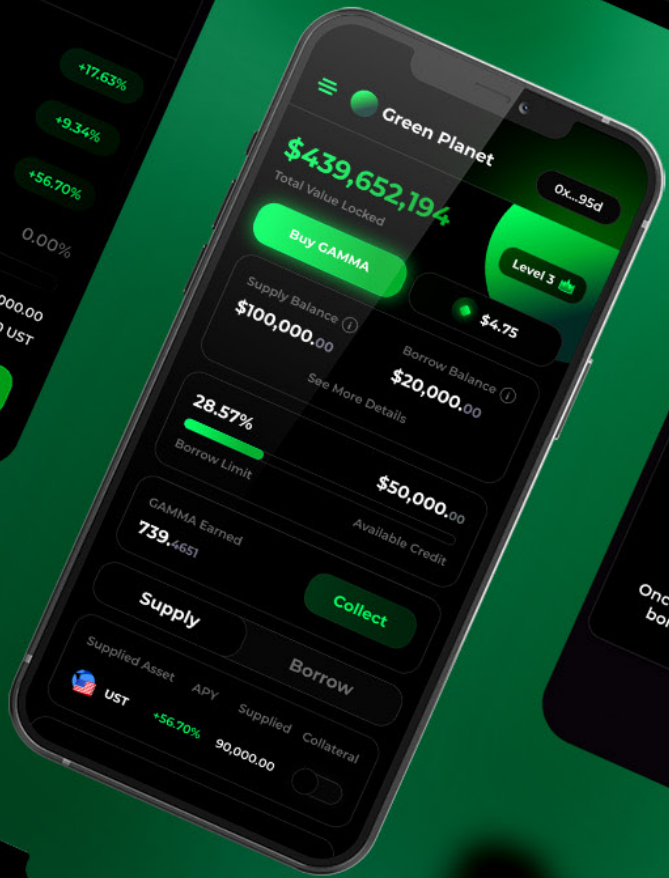
The Green Planet lending and credit protocol has been designed to be the first decentralized money market to offer users discounts through supplying Planet Finance's utility token: GAMMA.

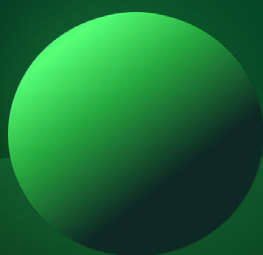
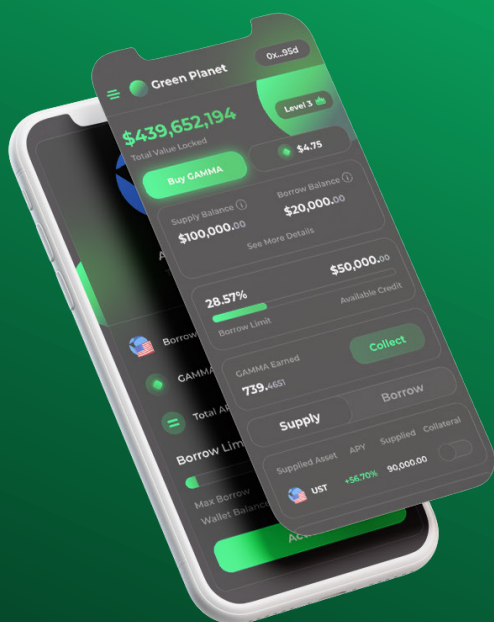
The Green Planet will be a complimentary addition to the existing DeFi applications on Planet Finance allowing users to swap assets, stake assets, earn interest, aggregate yields and now supply and borrow assets all on the same application. The Green Planet will operate on the Binance Smart Chain and will be governed by AQUA.



References

- [1] Binance Smart Chain - <https://www.binance.org/en#smartChain>
- [2] Compound White Paper - <https://compound.finance/documents/Compound.Whitepaper.pdf>
- [3] Crypto.com Interest Rates - <https://crypto.com/earn>
- [4] Nexo Interest Rates - <https://nexo.io/earn-crypto>
- [5] Celsius Network Interest Rates - <https://celsius.network/rates/>
- [6] Binance - <https://www.binance.com/>





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