BGBB SMART CONTRACT

GENERAL TECHNICAL SPECIFICATIONS

2021

1 PURPOSE

The BGBB Token, referred to as BGBB, is a BEP-20 compliant smart contract designed for deployment on the Binance Smart Chain.

BGBB is a decentralized, fairly launched, automatically liquid, trustlessly exchangeable, interest-bearing, bond-like token.

The core purpose of the BGBB token - staking - is similar to both bonds and certificates of deposit: rewarding the holder with an earned interest in exchange for locking up their funds for a certain period.

BGBB incorporates some of the features from both of these traditional instruments but improves significantly upon them.

Certificates of deposit tend to hold a lower risk but offer a lower return and only pay out interest on their maturity date.

Bonds tend to be somewhat higher risk, higher return, and payout interest regularly on a set schedule (typically every six months).
BGBB is most similar to a bond in that it earns relatively high interest but allows users to withdraw it whenever they want.
BGBB is superior to bonds and CDs in every way:

BGBB gives the staker complete flexibility in choosing exactly when to withdraw their interest during the life of the stake. You can withdraw interest daily, irregularly, wait until maturity, or whatever you like!
BGBB stakes have a higher return and much lower risk (due to being decentralized and trustless), as well as and far higher flexibility than both bonds and CDs.

No more trusting banks and governments to stay solvent and not change their rules. No more worrying that a bond issuer may default on you.
BGBB is pure, immutable code.

2 MOTIVATIONS & PRINCIPLES

Trusting your money in the custody of other individuals is inherently risky. This glaring flaw in traditional financial instruments is a primary motivation for developing BGBB. The BGBB contract ensures that users can always be in full custody and control their BGBB tokens, even during various economic activities.

The initial minting of BGBB, earning referral bonuses, opening and closing stakes, receiving interest, and even selling BGBB for BNB or other tokens can all be done end-to-end without the user's BGBB tokens ever being under the control of another person or system. Compare this to the world of banks you can('t) trust and traditional money managers that (don't) have your best interests at heart.

One crucial aspect of owning cryptocurrencies is having a place to safely, efficiently, and quickly trade them when needs arise.

We believe BSC Station, a popular and highly regarded decentralized exchange (DEX) smart contract on Binance Smart Chain, is such a place.

Following the fifty-day Liquidity Transformer Epoch, the BGBB contract will automatically, trustlessly, and irrevocably bootstrap its initial liquidity pool on BSC Station. At least 90% of all BNB sent by users to the BGBB contract during the LT Epoch will, in turn, be automatically transferred to BSC Station by the BGBB contract, along with an amount of minted BGBB in equal value

In exchange for and simultaneous to this liquidity pool deposit, BSC Station transfers to the BGBB contract an appropriate amount of BSCS liquidity tokens, which carry the sole power to withdraw that liquidity pool later. The BGBB contract will automatically, immediately, and provably destroy these UNI tokens by transferring them to a known burn address. In doing so, the BGBB contract ensures that this initial BNB/BGBB liquidity pool cannot be withdrawn from BSC Station by any person, party, contract, or entity — for all eternity.

The BGBB contract also allows users to earn interest on BGBB token time deposits called stakes, which are most similar to bonds but much more flexible. A stake earns interest like a bond, but with the added feature of allowing interest withdrawals at any time during the time of the stake - something bonds do not allow.

These bond-like interest-bearing stakes in BGBB are forever and entirely in the custody of the user and their wallet. They can never be held, influenced, or confiscated by any third party.

3 BGBB CONTRACT FUNCTIONALITY

The BGBB contract has several key properties and core functions, outlined in detail in the following sections. Some essential mathematical calculations and data structures are presented here as well. Various example scenarios of user and multi-user activity and contract state evolution are illustrated where appropriate.

3.1 GENERAL PROPERTIES

The contract defines the token name as "BGBB Token." The token symbol is "BGBB" and the number of decimals is 18.
The base unit of BGBB is called BANKS. One BGBB is composed of one quintillion (1 × 1018) BANKS.

Time is tracked by the contract in whole-day increments, beginning at Day 0, which starts at midnight UTC preceding the contract deployment.

The individual days used for the LT Epoch will be higher day numbers in the code, rather than being day numbers 1–50.

The contract has no exceptional functionality granted to the deploying account, no administrative keys, and no concept of a contract owner.

All users, including the founders and developers, have precisely equal access to the contract's functionality.

The contract, once deployed, is immutable. No proxy or delegate contracts are involved.

3.1.2 TOKEN SUPPLY

The contract has no set token supply. The total initial supply minted by users through the Liquidity Transformer will fall within a defined range, determined partially by confined randomness and partially by referral bonuses.

The 50-day Liquidity Transformer has an average of 5 million BGBB available each day, though some days have randomness involved. This means the total supply available in the LT will likely be around 250 million BGBB. Referrer bonuses could mint up to an additional 10% on top of that (i.e., 25 million more).

This total supply will then matched by a minted batch that is then sent permanently to BSC Station.

BGBB sent to BSC Station will be up to 10% less than what was mintable through the LT and referral bonuses due to the paper bonds holders' reimbursement.

Regardless, the ratio of BGBB/BNB sent to BSC Station will match precisely the ratio of mintable LT BGBB (including referral bonus BGBB) to LT BNB, ensuring that the initial BSC Station price matches the overall price of the LT.

The total supply of BGBB in existence after the LT and BSC Station provision is subject to LT randomness, referral activity, and whether the paper bonds holders' reimbursement ends up being a complete 10% or less due to the hardcoded cap.

For example, if we assume the randomness averages out, assume half of all possible referrer bonuses are earned, and assume the team reimbursement cap causes it to be only 5% of the LT BNB, then the total initial supply would be:

baseLTSupply = 250,000,000 BGBB
referrerBonuses = baseLTSupply * 5% = 12,500,000 BGBB
totalLTSupply = baseLTSupply + referrerBonuses = 262,500,000 BGBB
bscsBatch = totalLTSupply * 95% = 249,375,000 BGBB

totalInitialSupply = totalLTSupply + bscsBatch = 511,875,000 BGBB

Though extremely unlikely (virtually impossible), the absolute minimum possible total initial supply (all random days get their minimum values, no referral bonuses, and a low enough LT BNB total that makes the team reimbursement exactly 10%) would be:

baseLTSupply = 180,000,010 BGBB
referrerBonuses = baseLTSupply * 0% = 0 BGBB
totalLTSupply = baseLTSupply + referrerBonuses = 180,000,010 BGBB
bscsBatch = totalLTSupply * 90% = 162,000,009 BGBB

totalInitialSupply = totalLTSupply + bscsBatch = 342,000,019 BGBB

Though equally unlikely (virtually impossible), the absolute maximum possible total initial supply (all random days get their maximum values, maximum referral bonuses, and a high LT BNB total that makes the team reimbursement approach 0%) would be:

baseLTSupply = 319,999,990 BGBB
referrerBonuses = baseLTSupply * 10% = 31,999,999 BGBB
totalLTSupply = baseLTSupply + referrerBonuses = 351,999,989 BGBB
bscsBatch = totalLTSupply * ~100% = 351,999,989 BGBB

totalInitialSupply = totalLTSupply + bscsBatch = 703,999,978 BGBB

The total token supply will inflate at a rate of 4% per year, starting once the Liquidity Transformer Epoch ends and the Circulation Epoch begins. Some of the new tokens will be minted directly to stakers upon closing a stake, and some minted to stake referrers. If no stakes are closed on a given day, and no stakes scrape interest on that day, no new tokens are minted that day, though they are earmarked for minting later. Once a stake is closed, all tokens the stake had earmarked to it for all past days will be minted at once.

3.2 LIQUIDITY TRANSFORMER EPOCH

The launch of the BGBB contract will kick off an initial 50 day phase during which users may send BNB (or any BEP-20 token traded on BSC Station) to the contract to reserve BGBB tokens. The tokens reserved can be minted by the users immediately following the end of the LT Epoch, i.e., the start of day 51.
Each day of the LT Epoch will have an amount of BGBB tokens that are reservable by all those who deposit BNB to that day. Most days will have exactly 5 million BGBB available, but the other days will have their available BGBB amount randomly set within a predefined range. The contract will determine these random amounts shortly after the end of each random day by leveraging the Provable (formerly called "Oraclize") smart contract's Random Datasource interface.

The generated randomness is delivered on-chain in a trustless and provably cryptographically secure manner. For more detailed information about Provable, please read their random Datasource white paper and their security deep dive.
Each day's available BGBB ends up getting split amongst the users who deposited ETH to that day, in direct proportion. In other words, a user that made a reservation on a particular LT day will later be able to mint the fraction of that day's available BGBB that equals the fraction of the day's total BNB they sent in.

3.2.1 TOKEN RESERVATION

On any given day of the LT Epoch, users may choose to send ETH (or any BEP-20 token traded on BSC Station V2) to the contract and assign it to any of the LT Epoch days that have not yet concluded.

We call this action a "token reservation."

For example, during day 10, users may send and assign BNB to any of the days 10–50, but not to days 1–9.

Each token reservation is assigned to a single day, but users may make as many such reservations as they wish to as many different days as they wish.

The BGBB contract front end will also allow users to spread a single reservation amount of BNB (or BEP-20) evenly across all remaining LT days. This "dollar cost averaging" feature saves gas for those who wish to reserve an equal part of each LT day.

Users can make reservations with BNB or any BEP-20 token that's traded on BSC Station.

This is done via direct integration with BSC Station, which swaps the BEP-20 for BNB as part of the reservation transaction. The functionality is the same as the users trading the BEP-20 for BNB on BSC Station and then sending the BNB to the BGBB contract for a token reservation. The benefit of using the BGBB reservation interface is that it saves gas fees and time.

Every single token reservation must be of a minimum BNB amount to make spam attacks cost-prohibitive. The specific minimum amount will be finalized at a later date, closer to launch. This is because the price of ETH may change significantly between the time of this writing and the contract launch. The minimum will likely be in the neighborhood of $10 worth of ETH.

The contract will provide public interfaces for viewing the total amount of ETH currently assigned to each LT Epoch day across all users, as well as the total BGBB available for each day (where that supply has been determined, in the case of random days). The min/max range will also be retrievable from the contract for days where the supply has not yet been finalized.

3.2.2 DAILY LT SUPPLY SCHEDULE

Every LT day has an average of 5 million BGBB available for reservation. Some days with randomly determined amounts have tight ranges of only a few hundred million BGBB invariance, and others are highly variant, ranging from a single BGBB to ten million BGBB (technically 9,999,999 BGBB, to preserve a strict average of 5 million per day).

In this way, the LT Epoch provides various exciting options for users wishing to gamble with their BNB and at multiple levels of risk/reward.
The following table outlines how many BGBB will be available for user reservation on each day of the LT Epoch. Most days have exactly five million BGBB available. The rest show two supply values: the minimum and maximum available that day. Each day is color-coded for relative risk level, from none to high):

MON	TUE	WED	THU	FRI	SAT	SUN
5M	5M	5M	5M	5M	5M	5M
4.5-5.5M	5M	4.5-5.5M	5M	1M	5M	4-6M
5M	4-6M	4-6M	5M	1M	5M	3.5-6.5M
5M	3.5-6.5M	5M	3.5-6.5M	1M	5M	5M
3-7M	5M	3-7M	5M	1M	5M	2.5-7.5M
2.5-7.5M	5M	2.5-7.5M	5M	1M	5M	1M
5M	1M	5M	1M	1M	1M	5M
5M						

3.2.3 RESERVATION REFERRALS

The BGBB contract has a direct, one-level referral system that rewards both the referrer and referee when a user reserves BGBB tokens in the LT. This referral system is an incentive to help increase the amount of BNB sent in, in turn, funding a larger and more robust initial liquidity pool on BSC Station.

When a user makes a token reservation, the front-end interface checks if their browser has a referral cookie stored. If such a cookie is present, the contract notes the referrer's BNB address and associates it with the referee's token reservation. The contract also tags the user's token reservation as having been through a referral, and this reservation is credited as having been 10% more BNB than it was.

When the user mints their reserved tokens after the end of the LT Epoch, each token reservation through a referral will mint 10% more BGBB than if it hadn't been through a referral.
Users may change the referral cookie stored in their browser at any time by clicking another referrer's link. If they do, their future token reservations would be associated with the new referrer. All past token reservations for that user remain as is; their previous referrer(s) do not lose credit for their existing referred token reservations.

3.2.3.1 REFERRER BONUSES

When the LT Epoch ends, referrers that have referred enough ETH into the system, via their referred users token reservations, can then mint an amount of bonus BGBB.

The LT referrer bonus system has two tiers. Bonuses (paid in BGBB) are based on how much total BNB their referral link brought in to the LT:

- Refer 1 - 49.999999999999999 BNB
- Bonus = 0.05 BNB (paid in BGBB)
- Refer 50 or more BNB
- Bonus = 10% of BNB (paid in BGBB), and “CM Referrer” status

Note: all referral bonuses are paid in BGBB. When the LT ends, an effective total LT BGBB/ETH exchange rate is calculated by looking at the total amount of ETH sent in by all users and the total amount of BGBB made available for reservation. This ratio is then used to calculate the amount of BGBB for each referral bonus.

Examples:

- David refers to a few friends who, in total, send 0.83 ETH into the LT. Alice fails to reach the 1 BNB minimum for the first tier, earning no bonus BGBB.

- Mary refers to several friends who, in total, send 3.6 ETH into the LT. Bob qualifies for the first bonus tier, earning a flat bonus of 0.05 ETH worth of BGBB.

- Sam creates several BGBB videos and publishes her referral link on them. Users clicking her referral link send a total of 64 ETH into the LT. Eve qualifies for the top bonus tier, so she earns 6.4 ETH worth of BGBB and permanent "CM Referrer" status.

3.3 CIRCULATION EPOCH

When the final LT Epoch day ends, the Circulation Epoch begins. At this point, users cannot make any further token reservations.
Users may now mint reserved BGBB and referrer bonus BGBB. Users may begin staking BGBB. 90% or more of all ETH sent into the LT, and a matching batch of BGBB is automatically sent to BSC Station, so users may begin trading BGBB and ETH there. All standard BEP-20 functions involving minted tokens are also now available. At the start of the fifteenth day of the Circulation Epoch, there will be a one-time automatic share price increase of 10%.
Once the LT Epoch has ended, there is a public function in the contract that anyone may call to trigger the following one-time sequence of actions to start the Circulation Epoch:

1. Calculate the total BNB sent into the LT. Set aside 10% or 2,000 ETH, whichever is less, for the BGBB team reimbursement performed in Step 4 below. The remaining 90% (or more) of this ETH is the "BSC Station Provision BNB."
2. Calculate the total BGBB that is available to be minted due to token reservations and referrer bonuses. Calculate the same fraction of this BGBB (90% or more) used to determine the BSC Station Provision BNB in Step 1 above. Immediately mint this amount of new BGBB. This is the "BSC Station Provision BGBB."
3. Transfer the "BSC Station Provision BNB" and "BSC Station Provision BGBB" to the BGBB/ETH BSC Station exchange pair contract, forming its initial liquidity pool. As part of this transfer, the BGBB contract receives back from the BSC Station contract an amount of BSC Station liquidity tokens and immediately burns these by transferring them to a known burn address.
4. Transfer the 10% (or less) of LT BNB set aside in Step 1 to The BGBB team's BNB address.

3.3.1 BSC STATION PROVISION

The BGBB contract's constructor function, executed when deploying the BGBB contract, will call the BSC Station factory contract to create the BSC Station BGBB/BNB exchange pair contract. This newly created exchange contract's address will be stored internally in the BGBB contract.

This newly created BSC Station BGBB/BNB exchange pair contract will simply lie dormant until the Circulation Epoch begins and the BSC Station provision transfer is executed using the stored address. No minted BGBB exists until that point, so that no liquidity can be added until then.

As part of sending the BSC Station provision BGBB and BNB to the exchange pair contract, a BSCStationV2Router contract is used, which internally wraps the BNB into WBNB (wrapped BNB), as is standard in BSC Station.

The BSC StationV2Router contract returns an amount of BSC Station liquidity tokens to the BGBB contract as part of the BSC Station provision transaction. These BSC Station liquidity tokens represent ownership of the liquidity pool the BGBB contract just sent in and carry the sole power to withdraw that liquidity. The BGBB contract has no code or function allowing such a liquidity withdrawal. However, as a further show of the BGBB team's commitment to making BGBB a completely trustless system, the BGBB contract will automatically and irrevocably destroy these UNI-V2 liquidity tokens upon receipt. This is done by transferring them to a known "burn address," such as0x0.

Once the BSC Station provision is complete, users are free to use BSC Station's front end to swap BGBB into BNB and vice-versa. They may also choose to deposit their liquidity pools of BGBB/BNB to earn fees from traders.

3.3.2 BONDHOLDERS & TEAM REIMBURSEMENT

Before deploying the BGBB contract, the BGBB team will determine its total expenses for reimbursing the original bondholders and developing and launching BGBB (wages paid to developers, marketing spending, and audit costs.) The team working on the project will claim absolutely no profit.
These expenses' total is represented in the contract source code as a hardcoded amount of 4,000 BNB.
When the LT Epoch closes and the Circulation Epoch begins, the total BNB sent into the LT gets divided into two buckets:

- 10% of the LT BNB (not to exceed 2,000 ETH)
- All remaining LT BNB

The 10% (or less) bucket of BNB is then transferred to (1) a BNB address owned by the BGBB team and (2) to the wallets of the paper holder (up to $10K worth of BNB).

The other bucket (90%+) is sent to BSC Station to create the first liquidity pool for BGBB.

3.3.3 MINTING TOKENS

Once the LT Epoch has ended and the Circulation Epoch has begun, users may now mint BGBB tokens, either due to having reserved BGBB in the LT Epoch or having earned referral bonus BGBB or both.

The user does the minting of BGBB on-demand through the front-end interface in a single batch. The interface will show how many BGBB users can mint, broken down by reservation and/or referral bonus sources. Users may mint their BGBB immediately or wait as long as they like, without penalty.

Users will likely want to mint their BGBB sooner rather than later to take advantage of staking them to earn interest, which becomes less profitable the longer one waits.

3.3.4 SUPPLY INFLATION

The total circulating supply of BGBB inflates at a constant rate of 4% per year. At the end of every day of the Circulation Epoch, the contract calculates how many new BGBB will be minted for that day to achieve that inflation rate.

```
totalBGBBSupply = circulatingBGBB + stakedBGBB
dailyInflationRate = (1.04 ^ (1 / 365) - 1)
dailyInflationRate =~ 0.000107459782027 9

newBGBBToday = totalBGBBSupply × dailyInflationRate
```

These new daily inflation BGBB are not immediately minted. Instead, they are earmarked for distribution to two parties: three quarters (3% inflation) to all active stake shares on that day and one quarter (1% inflation) to all active, qualified CM shares that day. Each active stake is earmarked a fraction of this new BGBB in proportion to the stake's shares percentage of the total share pool that day.

The same apportionment scheme is used for the BGBB earmarked to qualified CM shares.

An example scenario:
On day X, suppose there are:
100,000,000 total circulating BGBB
30,000,000 total staked BGBB
10,000,000 total shares

The total new BGBB that will be generated this day is then:

newBGBBDayX = (100,000,000 + 30,000,000) × 0.000107459782027 9
newBGBBDayX = 13,969.771663627 BGBB

This new BGBB is split into two amounts:
- 3/4 for stake shares (i.e., 3% inflation)
- 1/4 for CM shares (i.e., 1% inflation)

Now, suppose user A has an active stake that is 2,000,000 shares.
On day X, this user's stake then gets some BGBB earmarked for it:

userANewBGBBDayX = newBGBBDayX × (3/4) × stakeShares / totalShares
userANewBGBBDayX = 13,969.771663627 × (3/4) × 2,000,000/10,000,000
userANewBGBBDayX = 2,095.46574954405 BGBB

3.3.5 STAKING

The BGBB contract allows users to stake their BGBB, locking it up for a period of days to earn interest. This is the primary function of the contract during the Circulation Epoch.

Users may open as many stakes as they like. After a stake reaches full maturity, the user may close it at any time to receive their entire principal, plus interest, without penalty.

Unlike some other stakeable tokens, BGBB never penalizes a mature stake, no matter how late it is eventually closed. This allows users much more flexibility, especially for taxable income purposes. Also, should a user pass away before being able to close their stakes in a timely fashion, the BGBB contract thus remains in compliance with estate laws of various jurisdictions that make it illegal to penalize the assets of a deceased person.

3.3.5.1 OPENING STAKES

When users open a new stake, they choose the amount of BGBB to stake and the stake's length in days. The minimum stake amount is 0.000000000001 BGBB (1000000 BANKS). The minimum stake length is one day, and the maximum stake length is 15,330 days (just under 42 years).

Once a stake is opened, it is in "Pending" status. This means that the stake won't technically begin until the following day. A user may close a stake in Pending status, receiving back the stake's principal without penalty or interest.

Pending stakes become "Active" status once the next day begins. At this point, closing the stake before it reaches "Mature" status will incur a penalty.

When a stake is opened, the BGBB tokens staked are burned by the contract and converted into "shares."

These shares exist for the life of the stake. Once the stake is closed, the shares are destroyed, and BGBB is minted back to the user (along with any interest added and penalties deducted.

3.3.5.2 SHARES AND INTEREST

When a user opens a stake, the smart contract burns the BGBB principal and converted it into shares. These shares represent the stake size and length and, indirectly, data on when the stake was opened.

The amount of shares a newly opened stake gets is determined by a global "share price" tracked in the BGBB contract AND a percentage bonus based on the length of the stake. This share price only increases; hence staking earlier is better than later.

Stakes earn interest daily through the BGBB supply inflation AND other stakes' penalties paid.

The BGBB supply inflates at about 4% per year. 3/4 of that inflation (i.e., 3% APR) is distributed daily to all active stakes, in proportion to their shares compared to the total share pool. The remaining one quarter (i.e., 1% APR) is distributed daily to the CM referrer shares in the same proportional manner.

Depending on the length of the stake, a bonus amount of shares will be generated on top of the amount determined by the staked amount of BGBB and the current share price. This bonus scales linearly from slightly above 0% for a one-day stake to 25% for a five-year stake and 30% for a 42-year stake. For instance, a stake with a length of 1.5 years will generate1.5 * 5% = 7.5% bonus shares

The share price starts at some predetermined value denominated inBGBB per share. Whenever any stake is closed, the contract calculates a ratio of that stake's total return (principal + interest - penalty) to its shares..

If this ratio is greater than the current share price, then the share price is immediately set to this new, increased value.

The share price can only increase over time, albeit relatively slowly. This ensures that earlier stakes get more shares than later stakes of the same amount of BGBB. This share price increase mechanism also prevents users from compounding their interest with a sequence of smaller stakes to try and outperform a single long stake of the same size.
At the start of the fifteenth day of the Circulation Epoch, the share price will be automatically increased by 10% as a one-time event. This creates a powerful incentive for users to open their stakes during the first two weeks of the Circulation Epoch. Waiting until day fifteen to open a stake will mean you get roughly 9% fewer shares than you would have on the previous day for the same amount of BGBB staked. In turn, that means approximately 9% less interest earned by the stake.

3.3.5.3 SCRAPING STAKE INTEREST

Users will have the ability to withdraw (scrape) any amount of earned interest from an Active stake (i.e., before the stake fully matures).

Users can choose exactly how much interest they wish to scrape up to the maximum (all accrued, unscraped interest from all previous days). Users can scrape the accumulated interest from an Active stake multiple times over the course of the stake.

Scraping interest is possible starting on day 2 of the active stake. On day 1 (the first active day), the stake has not yet completed a full day of being active and thus has not yet accrued any interest.

When a stake is closed, whether Active or Mature, the interest minted back to the user only includes interest that hasn't already been scraped.

Scraping interest will not affect the stake's principle but will reduce the number of shares the stake has going forward. This effectively means that the stake will earn slightly less interest on the current and all future days of the stake than it other BGBB would have.

This share reduction also prevents users from ending up with more overall shares if they choose to immediately re-stake their scraped interest.

Scraping interest may cause a share price increase, just as when closing a stake. Stakes track exactly how much cumulative scraped interest the user has scraped over the course of the stake for these calculations.

The process for determining the possible share price increase and the stake shares reduction is as follows:

First, calculate a possible new share price based on the stake's pseudo-return (principal plus all scraped interest thus far, including this scrape) divided by the stake's initial shares:

```
newSharePrice = (stakePrincipal + cumulativeScrapedInterest) / stakeInitialShares
```

Next, if this new share price is greater than the current global share price, update the global share price (which may have just increased due to this scrape):

```
if (newSharePrice > globalSharePrice) globalSharePrice = newSharePrice
```

Next, calculate an amount of shares to be removed from the stake, based on the interest being scraped now and the global share price:

```
stakeSharesToRemove = interestBeingScrapedNow / globalSharePrice
```

Finally, reduce the stake's current shares:

```
stakeCurrentShares = stakeCurrentShares - stakeSharesToRemove
```

3.3.5.4 CLOSING STAKES

A user may close a stake at any time. Depending on the stake's status (where the stake is in its lifecycle), different things will happen:

- Closing a Pending stake - the stake shares are destroyed. The entire stake principle is minted back to the user without interest or penalty.
- Closing an Active (premature) stake - the stake shares are destroyed. The stake principal is penalized (see below) and minted back to the user with all interest accumulated thus far.
- Closing a Mature stake - the stake shares are destroyed. The entire stake principal and all interest accumulated are minted back to the user. There are never any penalties for closing a Mature stake, no matter how late.

The penalty deducted from the principal (stakedBGBB) when closing an Active stake is as follows:

If the stake is one day long:

$$penaltyAmount = stakedBGBB \times 0.1$$

If the stake is two or more days long:

$$penaltyAmount = stakedBGBB \times (.1 + .8 \times ((daysLeft - 1) / (stakedDays - 1)))$$

Thus, if you close an Active stake that was 100 days long on its final day before maturity, you get a 10% penalty applied to the principal. If you close the same stake on the first day of being Active, you get a 90% penalty. The penalty scales linearly between those two extremes.
Any such BGBB penalized from a stake's return is earmarked for distribution to all active stake shares that day. These penalty distributions are only realized by those stakes' shares when each of those stakes ends

3.3.5.5 STAKE REFERRALS

Just as the BGBB contract includes a referral program to incentivize users to help bring more ETH into the Liquidity Transformer, it also provides a referral program for staking. When a user opens a new stake, the front-end interface checks whether the browser has a referral cookie, just as it does when making a token reservation in the LT Epoch. If such a cookie is present, AND the new stake is at least 365 days long, the contract tags this new stake with the referrer's address.

A referred stake generates 10% extra shares for the staker (beyond what it would have if not referred) as well as an equal (but without the 10% bonus) amount of "critical mass shares" (a.k.a. "CM shares") for the referrer. The system-wide pool of CM shares gets earmarked one-quarter of the daily inflation BGBB, but only for referrers that have qualified as CM referrers.

To qualify as a CM referrer, a user must have reached a total of $10,000 worth of referred stakes of 365+ days in length. If a user meets this condition, they are immediately and forever tagged as a CM referrer and cannot ever lose that distinction, regardless of if their referees close all their stakes.

Another way to qualify as a CM referrer is to have referred 50 ETH of token reservations in the referral system of the LT Epoch. Users reaching that level are automatically pre-qualified as CM referrers forever.

Calculating a new stake's USD value is only done once when the stake is opened. The BGBB/USD exchange rate used for this calculation will be determined by querying the BSC Station BGBB/BNB and BNB/DAI exchange pair contracts' price oracle interfaces.

3.3.5 LIQUIDITY PROVIDER STAKING

BGBB has an additional way of staking, which rewards participants (called liquidity providers) for the BGBB/BNB pair if certain conditions are met.
If the liquidity percentage of BGBB on BSC Station falls below 20%, then you may stake your LP tokens with the BGBB contract and start earning interest (on top of the trading fees you already get).

This new money comes from the 3% inflation for stakers such that the 3% for stakers slowly decreases and the 0% for LPs gradually increases. Once this triggers, it will become valuable for a certain amount of people to LP stake since there is now a new pot of money available for LPs to earn daily interest.

An additional perk for LP staking is that you may end your stake at any time and collect your LP tokens.

When the BSC Station liquidity goes back above 30%, the rewards slowly start diminishing. The staking inflation will creep back up towards 3%, and the LP inflation will creep back towards 0% until triggered again. This is a safeguard in the system that will most likely not be triggered for years, if at all. Users can still choose to add to liquidity themselves at any time to earn about 6% ROI from fees, but the additional incentive of shares interest doesn't trigger until needed.

3.4 BEP-20 FUNCTIONALITY

The BGBB contract conforms fully with the BEP-20 token standard.

This BEP-20 standard compliance means that applications, websites, exchanges, and smart contracts can easily integrate with or be built on top of the BGBB contract.

4 BGBB ECOSYSTEM

This section contains additional information about the BGBB website and ecosystem.

4.1 REFERRAL LINKS

You can start spreading your ref link today and building a base of referred users well before contract launch. So, do yourself a favor and start sharing your ref link everywhere!

Format:

https://Bgbb.io/?w=YOURPUBLICWALLETADDRESS

Example:

Get a 10% Bonus BGBB!

Anyone may use a referral link to direct users to the BGBB website, this Teal Paper, the forthcoming official contract web interface, or any other page on the Bgbb.io domain or its subdomains to potentially earn various referral bonus BGBB from those users contract interactions.

When a user clicks such a ref link, the Bgbb.io website stores a cookie on their browser, containing the referrer's BNB address from the ref link. If that user later sends BNB to the LT or starts a stake at least one year in duration, the cookie will cause the contract to mark that LT reservation or stake as referred by that referrer.

If a user already has a referral cookie in their browser and clicks a different ref link, the cookie will be overwritten with the second ref link's BNB address. Referrals are thus "the last click wins."
Referral links containing invalid BNB addresses will not work; the website will not create (or overwrite) the cookie.

4.2 NFT MARKETPLACE

The BGBB dApp will allow other people to revive their unfairly defaulted bonds via an open NFT Marketplace, encourage free and accessible trades of defaulted bonds, as well as stimulate open discussions around them.

People will be able to upload an image of their bonds papers, mint them as NFTs and then put them for sale or auction.

That way, the BGBB NFT Marketplace will develop as a fair and public assessment platform for unfairly defaulted bonds.
Users will buy, sell and mint their NFT on the NFT marketplace using the BGBB token.

100% of the collected fees collected from NFTs minting will be sent to a burn address.
That way, the BGBB token will sustain an additional steady burning mechanism, which will help increase the token's price in time and maintain a decentralized ecosystem.

4.3 PAPER BONDS DISTRIBUTION

All bonds in the collection are carefully selected and ranked according to their value and quality. These 200 bonds are owned by 133 individuals who are not connected with each other in any way. Each one of them will receive their reimbursement in their wallets. All transactions and wallets will be public and easily traceable on chain.

Each bond is valued at $100K.
One original paper bond in a frame and its coupon codes sheets, shipped anywhere in the world + its corresponding NFT, will be given FOR FREE to everyone who has met both of these conditions:

1. Have reserved at least $100K worth of BGBB tokens **AND**
2. Have these BGBB tokens staked for one or more years

For example, if we assume that 200 people stake x $100K worth of BGBB and stake them for one or more years, each one of them will be able to CLAIM A FREE original paper bond from the collection, as well as receive its NFT.

If it is the case that more than 200 people deposit x $100K worth of BGBB and stake them for one or more years, BGBB will tap into its "reserve collection," which consists of additional 100 bonds, each valued at a different price.

If it is the case that less than 200 people deposit x $100K worth of BGBB and stake them for one or more years, the remaining unclaimed paper bonds will be given out to the top BGBB stakes.

If it is the case that no user deposit at least x $100K worth of BGBB and stake them for one or more years, all the 200 bonds will be open for claiming to the 200 top stakers.

4.4 FUTURE DEVELOPMENT

Special Investment Plan:

Users can gain access to massive profits by depositing a desired sum (min $20 worth of any cryptocurrency) to a public address. 100% of the funds raised will be invested in pre-market allocations, most of which are off-limits for the average investor. All of these pre-market allocations have the potential to go up in value by a factor of x50 or more.
BGBB will distribute 100% of all profits proportionally to each user, according to their initial investment. The community will be able to vote on how often these collections and distributions will be made. More updates will be published soon.

On-ramp exchange [Q4 2021]

Easily buy BGBB or any other cryptocurrency with fiat via credit/debit card or a bank transfer. More updates on the on-ramp exchange will be published by the end of Q3 2021.

Decentralized Lottery [Q4 2021]

BGBB offers another way to win big. It will offer a permissionless,
global, decentralized, and transparent Lottery. No scams or faulty operators. Smart contracts ensure unparalleled transparency to win the trust of users. More updates on the Lottery will be published by the end of Q3 2021.

4.5 GOVERNANCE

No central authority is in charge of the future of the BGBB smart contract and dApp

The BGBB dApp will enable token-holders to propose, vote, and implement changes. Proposals can include adjusting the taxes rate model, switching to a different chain, investment plans, staking duration, or whatever is found necessary.
Token-holders can either vote on each proposal or delegate their votes to a third party.
BGBB Governance puts you in charge of the future of the BGBB token and dApp.

A voting GUI will be developed as soon as the LT epoch is completed.

5 CONCLUSION

The BGBB team sincerely hopes that our efforts to provide the general public with a trustless, decentralized, interest-bearing instrument will bear fruit and that BGBB will be a great success. But, we can't achieve these goals without the help of the community around us.

The BGBB project was started not to profit but from creating something beneficial for the world. We hope this document has made our vision and intentions clear.

We welcome any questions, comments, or criticism you may have. We also have some need for various types of contributors to the project.

Please join us in the official BGBB Telegram group at t.me/BGBBToken and the official BGBB Discord server to discuss the WISE project with the founders, developers, supporters, critics, and the rest the community.

6 ACKNOWLEDGEMENTS

BGBB would like to sincerely thank the pros in the WiseSoft, LLC team for publishing the WISE contract source code on GitHub and allowing the BGBB idea to be developed with peace of mind to trusting smart contract functionalities.

7 APPENDICES

TERMINOLOGY

- BGBB — the token and contract described herein.
- BONDIES — the base unit of the BGBB token, analogous to wei for BNB, or satoshi for BTC. One BGBB equals one quintillion BONDIES (1,000,000,000,000,000,000).
- Stake — a time locked deposit of BGBB which earns interest over time.
- Liquidity Transformer Epoch — the first fifty days of the contract's existence, during which users may deposit BNB to reserve part of the initial supply of BGBB.
- Circulation Epoch — the epoch immediately following the end of the LT Epoch, during which users may mint their tokens reserved in the LT Epoch, transfer tokens, stake tokens, etc.

- BSC Station — a decentralized, non-custodial BEP-20 token and BNB exchange on the Binance Smart Chain. The BGBB contract is integrated directly with BSC Station.
- BEP-20 — a token standard on Binance Smart Chain that extends ERC-20, the most common Ethereum token standard. You can think of it as a blueprint for tokens that defines how they can be spent, who can spend them, and other rules for their usage. Due to its similarity to Binance Chain's BEP-2 and Ethereum's ERC-20, it's compatible with both.

CODING STANDARDS

to be updated

SOURCE CODE AUDIT

to be updated