



Beyond Diamond Stable Coin

White Paper



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Abstract

Individual investors are underexposed to the precious gems market because of its closed and unstructured nature. The BDR offers opportunities to invest in precious gems with a transparent market value. Up to this date, there are no open-source diamond price sources or indices to track the current value of diamonds. BDR allows investors to view the fixated price of the physical asset by providing them with GIA certifications, Insurance evaluations, and bank statements. The creation of such a token opens investment opportunities and hedging options



Introduction

Since the theoretical concept of blockchain technology in 2008, hundreds of currencies have been issued by online platforms as cryptocurrencies. Blockchain technologies can be seen as decentralized payment systems that allow online payments to flow directly from one party to another without going through a financial institution, making international payments with lower cost and higher traceability through complex protocols, unlike other centralized systems.

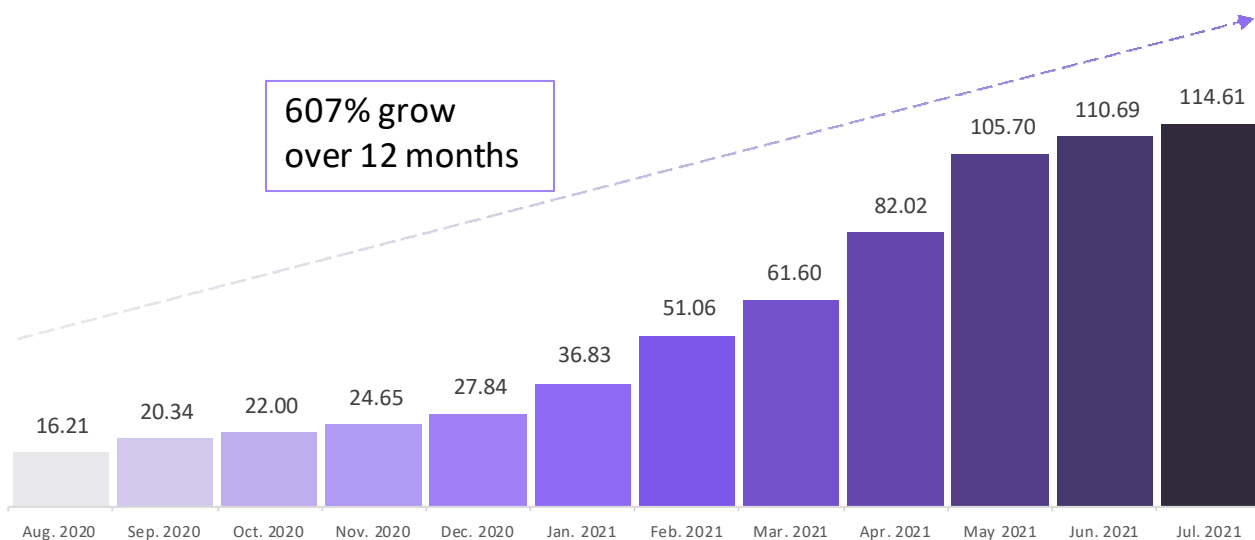


Despite the advantages, online merchants do not choose cryptocurrencies because of high price volatility - cryptocurrencies can depreciate or appreciate sharply against fiat currencies, leading to losses for cryptocurrency holders. This volatility should not be perceived as a disadvantage but as a characteristic feature of traditional cryptocurrencies. Cryptocurrencies like bitcoin have simple, predictable supply rules of issuance or mining, changes in demand uniformly affect the price, the volatility of bitcoin price is equal to the market's volatility. With limited supply, demand shocks are fully absorbed by the price.



Based on the above logic behind the volatility of traditional cryptocurrencies, we understand that there must be stability within a range of currency values to both protect up and protect down. In turn, this will help protect income, savings, and business profitability and allow for sound business planning and forecasting for transactions and savings. Stablecoins have been developed to address the volatility of traditional cryptocurrencies. Stablecoins are cryptocurrencies that are typically backed by a third-party asset to provide stability in token value. As their name suggests, stablecoins are designed to be a price-stable cryptocurrency. They also differ from traditional cryptocurrencies in terms of investor perception. Unlike traditional cryptocurrencies, Stablecoins can maintain value and hedge risk to other volatile assets, meeting the different needs of different investors. Owners of an asset-backed cryptocurrency own a portion of it, which means that the value of the cryptocurrency will follow the value of the collateral asset. Compared to a conventional contract, transactions are instantaneous.

Market capitalization of stablecoins from August 2020 to July 2021 (in billions USD)





Cryptocurrency and stablecoins

The Mastercoin whitepaper, written by J.R. Willett in January 2012, was the first to promote the concept of asset-pegged cryptocurrencies among the Bitcoin community. All Bitcoin exchanges and wallets that allow you to hold value as a fiat currency (like Coinbase, Bitfinex, and Binance) already provide a similar service in that users can avoid the volatility (or other characteristics) of a particular cryptocurrency by selling it for fiat currency, gold, or another asset reflecting that market requires intermediate that will store value used on the market in a stable form.

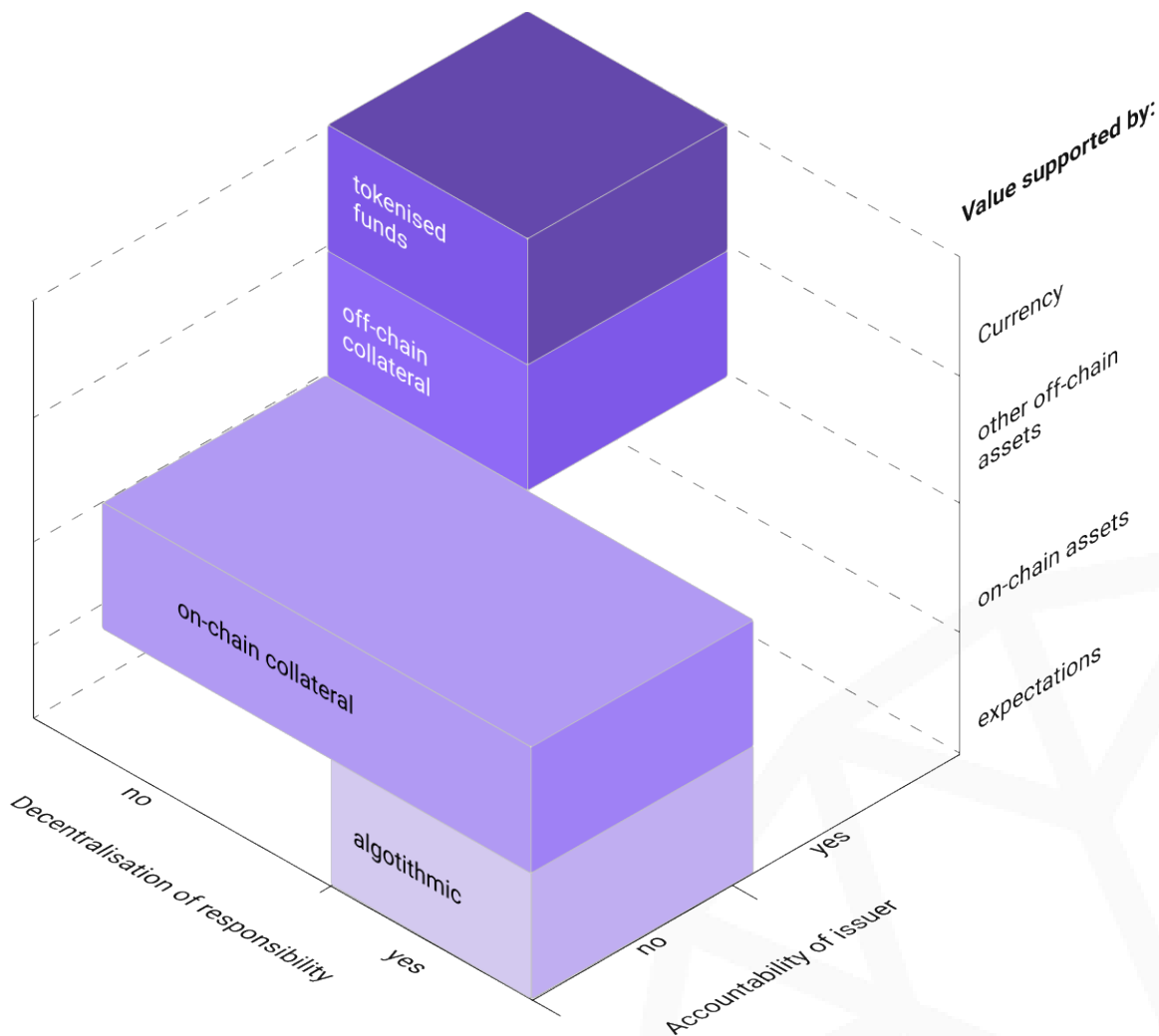
Stablecoins solve problems on many stages of money transaction processes. There are four different types of stable coins:

Off-chain collateralised stablecoins - are backed by other traditional asset classes (such as securities and commodities) that require a custodian for their safekeeping and are in the possession of the issuer of the stablecoins as long as the user does not redeem the stablecoins – or what is left of them in the case of default.

On-chain collateralized stablecoins - are backed by assets, typically cryptoassets, which are recorded in a decentralised manner and do not need either an issuer or a custodian to satisfy any claim.

Algorithmic stablecoins - are backed by users' expectations about the future purchasing power of their holdings, which does not need the custody of any underlying asset, and whose operation is totally decentralized

Tokenised funds - are a type of stable coins backed by funds (i.e. commercial money, e-money, or central bank money) which an issuer or custodian holds for safekeeping; this implies that there is a commitment to ensuring that tokenized funds can be redeemed in full.



This figure introduces the 'crypto-cube', which categorizes the four types of stablecoins according to three criteria: i) the existence/absence of an issuer that is responsible for satisfying any attached claim (right horizontal axis); ii) the decentralization/centralization of decision-making responsibilities over the stablecoin initiative (left horizontal axis); iii) what underpins the value of a stablecoin and its stability in the currency of reference (vertical axis). Classifying stablecoins on the basis of what backs their value allows us to highlight that some stabilization mechanisms require the intervention of accountable institutions (i.e. issuers and/or third parties in charge of bookkeeping and managing the initiative), while other stablecoins cannot be associated with any liable party.



Advantages of stablecoins



Avoidance of expensive conversion and withdrawal fees associated with standard cryptocurrency



Merchants can accept "Coin" as an alternative to other volatile crypto or fiat currencies



Accepting fiat deposits and processing withdrawals using traditional financial systems is complicated, inefficient, expensive



Transfer times of 3 to 7 days for international wire transfers to clear



Prevention of chargebacks associated with credit card charges which subject merchants to fees



Cross-border multi-national companies can conduct business transactions using USD valued." Coin.



Exorbitant fees for small value transfers



More fair currency conversion fees



Asset-backed tokens

Stablecoins are also referred to as Asset-Backed Coin, although they do not bear the same characteristics as crypto coins in their technical function, they have the parts of a token. In most cases, stackable coins are backed by fiat money (Fiat-coin), such as the US dollar, euro, pound sterling, and other fiat currencies. The collateral is often in a 1:1 ratio, which means that one Stablecoin is equal to one unit of money (e.g., the dollar). In addition to stablecoin backed by fiat currencies, stablecoin can be supported by other crypto coins (Crypto-coin) with 2:1 collateral, algocoins (Algo-coin), in which case stability is generated by algorithms and smart contracts that perform token emission management activities, and can also be backed by traditional assets such as oil or gold.

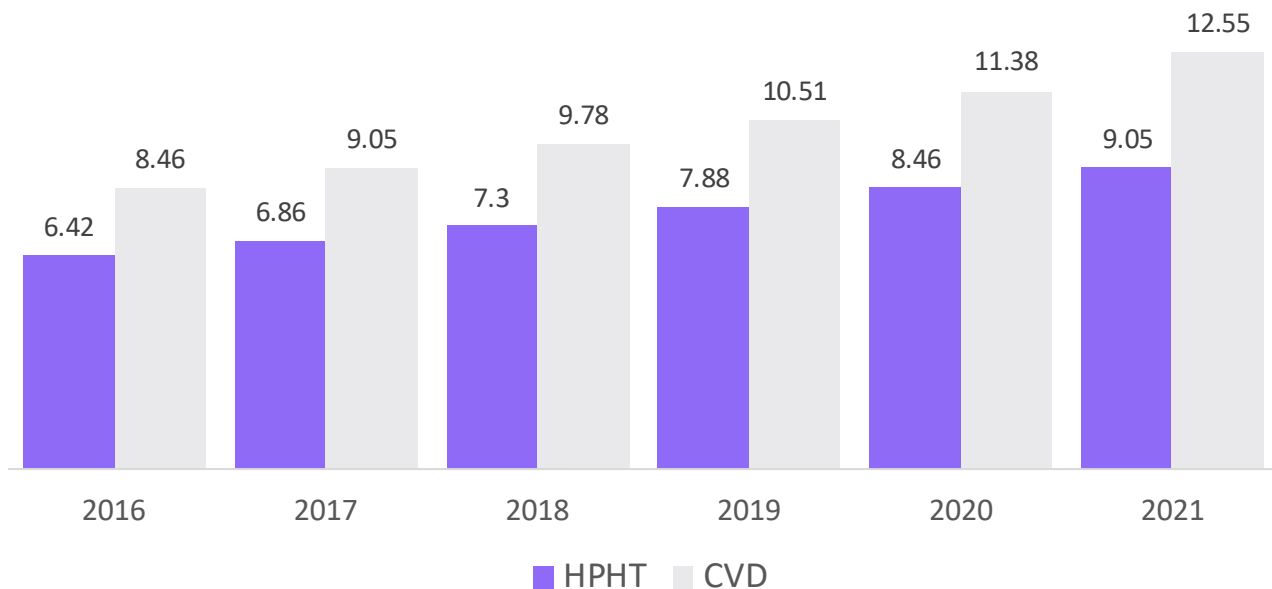
In the case of "BDR", the collateral methodology will be used to the best of its application. By producing diamonds, future coins will be stable in nature since the production process is fully transparent and controlled. Therefore, it is guaranteed that the collateral for the Coin is stable (only minor variations are applicable) and can be redeemed by the token user.



Current lab-grown diamond market state

When analyzing the lab-grown diamond industry it is forecasted that by 2030 lab-grown diamonds will take up to 10 percent of the whole diamond industry. Only two production methods are on the current market: high pressure, high temperature(HPHT), and chemical vapour deposition (CVD). CVD is the most popular method on the market, which is forecasted to reach a high of 16.5 billion USD dollars in revenue by 2024, while the HPHT method market revenue is forecasted to reach 11.7 billion USD dollars.

Market revenue of lab-grown diamonds worldwide from 2016 to 2021, by process



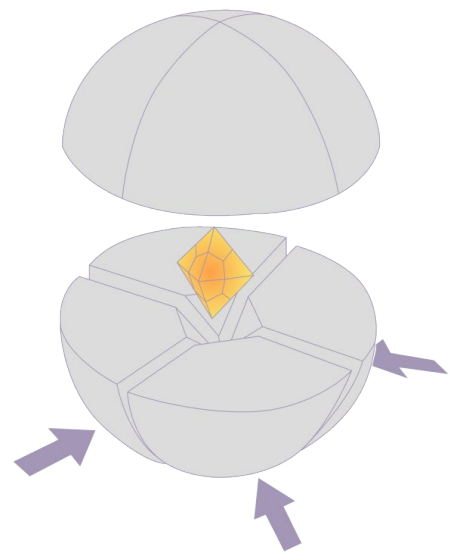


Physical diamonds

BARS Apparatus- is a developed high-pressure apparatus which differs from traditionally used single-axis compression apparatuses (belt, anvil, piston-cylinder) for the specified purposes by the following characteristics: multi-axis compression of cell minimizing deformations; effective system of block cooling providing duration of experiments in tens and hundreds of hours at extreme pressure and temperature values; multi-channel temperature and pressure measurements. The application of such devices is used for obtaining and modification of diamond, boron nitride, and other superhard materials; scientific research in materials science, physics, and chemistry of high pressures; experimental mineralogy and petrology of the upper mantle. This apparatus makes it possible to produce pure, transparent diamonds of bright yellow, golden, pink, red, blue, black, and green colour, weighing up to 2.5 carats. Diamond characteristics can vary from S1 to VVS1-VVS2 in production. Diamonds that will be used to back the BDR coin will be two carat VVS1 yellow diamonds.

In the center of the device, there is a ceramic cylindrical reaction cell of about 2 cm in size. The cell is placed into a cubic-shaped pressure-transmitting material, which is pressed by elements made from cemented carbide (VK10 hard alloy). The outer octahedral cavity is pressed by 8 steel sectors.

The growth rate for 5 carats (1.0 g) type Ib (yellow, nitrogen-rich) crystals using Fe–Ni catalyst reaches as high as ~20 mg/h towards the end of 100 h growth cycle, *i.e.* crystals of 5 carats (1.0 g) to 6 carats (1.2 g) can be grown in less than 100 h





Beyond Diamond Reserve

Using new technology to convert a portion of diamond company sales contracts into tokens could bring several benefits to both sides of the contract.

For issuers, the benefits are as follows:

1. The attraction of non-debt financing. The issued token is backed by products that are in production or just planned; the companies can sell future developments and, consequently, receive revenue from them. This can be analogous to a commercial advance that does not require financial maintenance.
2. Reduction in the cost and labor involved in selling. Sales of products often involve lengthy negotiations with customers. When some products are sold through Stablecoin, the burden on the sales department is reduced thanks to the platform, as contracts are freely negotiable, and there is no contractual bureaucracy.
3. Hedging tool. Depending on the type of supply contract, the deliverable's price may be fixed or linked to exchange (e.g. the London Metal Exchange - LME, or the London Bullion Market Association - LBMA). In the case of a fixed-price token issue, the producer will be able to lock in its proceeds if it foresees a fall in the exchange price of its products in the future.
4. New marketing channels. This tool helps producers sell to small buyers, bypassing traders. Since a token is a standard contract with a fixed volume of deliverables, it can be purchased through the platform by any buyer with a small volume of purchases, which is usually not of interest to a large producer and who must buy through a trader at a more premium price.



5. Increased investment demand. In the case of introducing a large number of issuers and buyers on the platform, this could attract the investment community and institutional investors. Nor should we rule out drawing a new class of investors who are profiled in the cryptocurrency market.

A buyer on the platform benefits from the flexibility of circulation. The token buyer will be able to resell it on the platform, which also provides flexibility in consumption. Since the buyer cannot always predict the exact volume of the product he may need in the future, he will be able to sell the excess book over time or buy up the missing volume.





Basic functionality

Each individual BDR token represents 2 carats held in a vault in custody and will be capable of being fractionalized up to nine decimal places (i.e. increments as small as 0.000000001 carats).

Holders of BDR will be able to redeem their tokens for a physical diamond, subject to the payment of fees and minimum redemption requirements.

Specific diamonds will be associated with each on-chain address that holds BDR tokens. BDR will create a web page so the token holder can specify the diamond that is associated with the tokens.

When transactions occur, diamonds associated with addresses won't be impacted by this transaction. Diamonds related to the BDR held at on-chain addresses can be consolidated. This reallocation will happen instantly so that each BDR token will always represent ownership of physical diamonds.

To either purchase or redeem BDR, users will be required to complete an identity verification process, agree to a set of specific terms for service for BDR, and meet applicable purchase or redemption minimums.

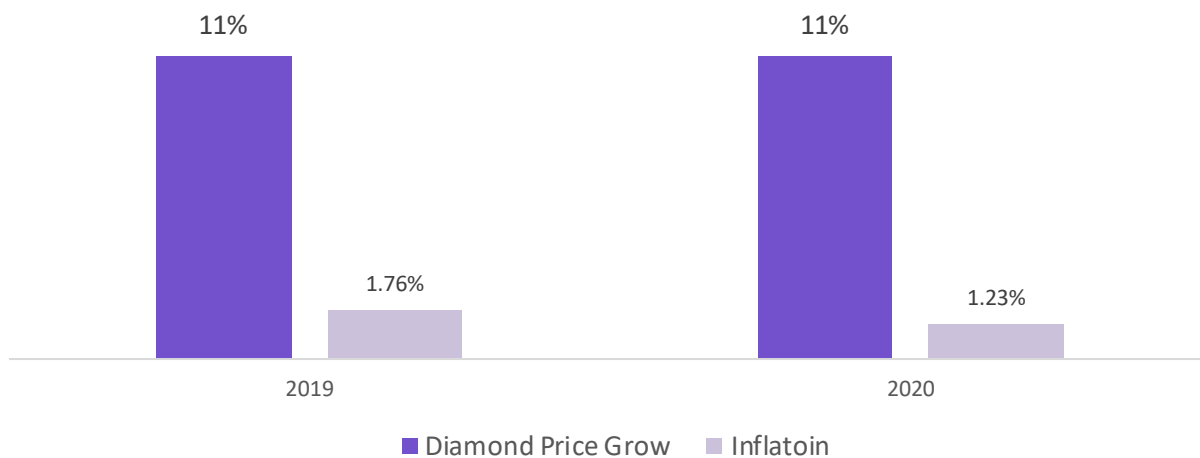


Technology stack

BDR stablecoin will be developed using Binance blockchain, the asset that will back the Coin will be the 2-carat lab- grown diamond, also known as synthetic diamond, cultured diamonds or man-made diamonds. Lab uses the technology HTHP, which gives their diamonds the same characteristics as naturally grown diamonds; the only difference is that it does not take billions of years for a diamond to form. The derivative of the Coin will be valued using three values (USD, value of bank insurance of the Coin that will be evaluated using diamond GIA certificates)

Stable coin price formed from the USD value of the bank insurance based on the GIA certificate. Inflation over the last decade has affected every currency. Purchasers of "stable Coins" will enjoy the relative stability of the USD and diamond price. Lab-grown Diamonds are priced in USD. The market value has grown by 22,5% in the last two years and is projected to increase by 133% by 2025, beating inflation. These factors together provide the basis of the stability of BDR.

USD inflation and Diamond price in USD change comparison





$$u(t) = MV(t) = K_p e(t) + K_i \int_0^t e(\tau) d\tau + K_d \frac{de(t)}{dt}$$

To facilitate the stability of the Coin, we will use an algorithm called the **proportional–integral–derivative controller** (PID) controller to stabilize the asset fully. PID is a control loop mechanism that combines three functions to maintain a particular value. Since there is no open-source market value of lab-grown diamonds, for example, Stock market price. There is no direct real-time value that the Coin can be connected to. Therefore we will create our value controller based on three factors for instant price rate, and each quarter, the other two functions (bank insurance and Gia certificates) will be re-evaluated by third parties for non-bias analysis. The three controllers, as mentioned before, will be USD + insurance price of diamonds + GIA certificate proof of diamond quality.

The initial asset amount will be two hundred 2-carat-yellow diamonds which will be held in a private bank. Assets will increase each month based on the demand of the Coin. The maximum increase capacity of each month will not exceed 400 diamonds.

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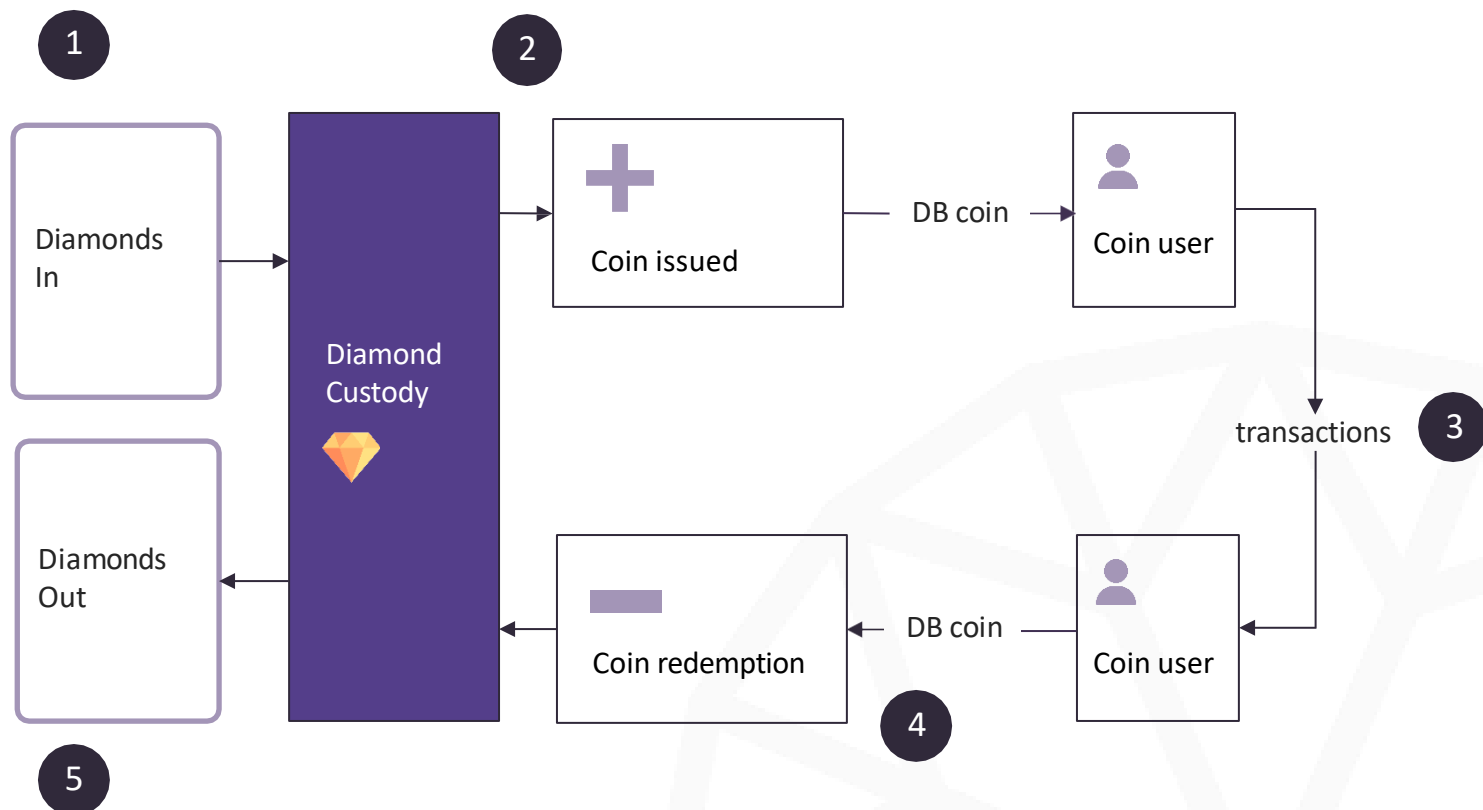


Tokenomics





The flow of funds process



Step 1 - We deposit new diamonds to a custody account.

Step 2 - Beyond Diamond Reserve company generates and credits the user's account. Coins enter circulation. Amount of carats deposited = amount of coins issued (i.e. 2 carats deposited = one Coin issued).

Step 3 - Users transact with coins. The user can transfer, exchange, and store coins via a p2p open source, pseudo-anonymous blockchain platform.

Step 4 - The user deposits coins with Beyond Diamond Reserve company for redemption into diamonds.

Step 5 - Beyond Diamond Reserve company destroys the coins and sends diamonds to the user.



Users can obtain coins outside of the process mentioned above via an exchange or another individual. Once a coin enters circulation, it can be traded freely between any business or individual. For example, users can purchase coins from exchanges.

The central concept to be conveyed by the Flow of Funds diagram is that “Beyond Diamond Reserve company is the only party who can issue coins into circulation (create them) or take them out of circulation (destroy them). This is the primary process by which the system solvency is maintained.

i. Proof of reserves

Diamond production is based in the European Union, the diamonds are produced, pass GIA certification, and insurance of diamonds are complete they will be transferred to a secured Vault in Switzerland where they will be held. Due to Vaults being independent of banks, they offer one hundred per cent insurance of stored goods which gives higher security of assets. Diamonds will be placed under 24-hour live video camera surveillance.

Buyers of the token will be provided with all of the listed documentation below:



GIA certification with QR code



Insurance assessment of the diamond



Access to live video footage of the Vault with diamonds



Bank statements



Factory information

All of the above documents prove the validity of the Coin and can be accessed upon buyers' request.



Main applications

i. Value storage

Physical diamonds are not usually used as an investment asset. However, physical diamonds are difficult and costly to transact with and store with their physically cumbersome nature. By imbuing a digital token with the economic characteristics of physical diamonds, BDR removes a great deal of friction and cost associated with holding the underlying asset. While the physical diamond itself will largely remain in vaults, BDR will enable certain economic qualities of a diamond – e.g. ownership, value – to flow seamlessly around the world

ii. Asset liquidity

By allowing retail investors to trade and invest in diamonds, BDR will bring liquidity to the market. By fractionating the price of a single carat, such trades and investments become available to the more general public to make financial decisions upon the market conditions. Small denominations at stable prices.

iii. Financial operations (Hedging)

In times of high market volatility or unexpected results of significant events on the crypto or financial market, investors and traders look for an asset that would serve as a safe place for the capital. However, non-institutional and individual investors experience high costs and burdens when they gain exposure to physical diamonds. BDR will provide liquidity and an accessible asset class of low market correlation.



iv. Monetary entity

By rethinking economic principles associated with diamond and bitcoin, users will gain access to a money- like asset with the scarcity basis and price stability of diamond. While many herald bitcoin lacks political affiliation and the resistance to censorship imply, the physical diamond was the original sovereign- neutral monetary unit. Bitcoin and physical diamonds both exist outside the control of monetary authorities, but bitcoin's massive price volatility has precluded its use as an economic unit upon which to base trade. By combining the most desirable qualities of these two assets, BDR could become the first widely- traded sovereign neutral monetary unit with a high degree of price stability. By making diamond-based contracting and global settlement accessible to everyone, BDR tokens will provide a new and feasible monetary basis for international trade. Governments may no longer adhere to a 'diamond standard', but BDR will empower individuals to do so.



Team



Ian Harebottle

CEO

A veteran of the broader mining and gemstone industry, Ian is well recognized for pioneering many of sectors most innovative strategies. He has extensive operational experience in both mining and marketing and is highly regarded within the greater luxury sector, with a proud legacy of having been the CEO of both gemfields and tanzaniteone during their most successful years



Mikhail Kamenetsky

CTO

HPHT specialist with over 10 years of experience in the development and management of production, as general manager, in both the public and private sector. In the project team, he is responsible for the development of production using modern HPTP technology for the synthesis of diamonds.



Alla Zomer

Creative Director

With over 15 years experience in wellness sector, during her carrier she established hemp projects in Namibia and Europe for industrial and wellness uses. Bringing her experience into the next level of personalize high end wellness care products.



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This whitepaper contains forward- looking statements or information (collectively “forward- looking statements”) that relate to our current expectations of future events. In some cases, these forward-looking statements can be identified by words or phrases such as “may”, “will”, “expect”, “anticipate”, “aim”, “estimate”, “intend”, “plan”, “seek”, “believe”, “potential”, “continue”, “is/are likely to” or the negative of these terms, or other similar expressions intended to identify forward-looking statements. We have based these forward- looking statements on current projections about future events and financial trends that we believe are relevant to our financial condition, results of operations, business strategy, or financial needs.

In addition to statements relating to the matters set out here, this whitepaper contains forward- looking statements related to the Company’s proposed operating model. The model speaks to our objectives only and is not a forecast, projection, or prediction of future results of operations.

Forward-looking statements are based on certain assumptions and analyses made by the Company in light of its experience and perception of historical trends, current conditions and expected



future developments and other factors it believes are appropriate and are subject to risks and uncertainties.

Although the forward-looking statements contained in this whitepaper are based upon what we believe are reasonable assumptions, there are risks, uncertainties, assumptions, and other factors which could cause our actual results, performances, achievements

and/or experiences to differ materially from the expectations expressed, implied, or perceived in forward-looking statements. Given such risks, prospective participants in the token sale should not place undue reliance on these forward-looking statements.

