

Carbon Responses

Questionnaire

Note: you can decline to answer certain questions (like marketing / go to market) which may be trade secrets and we will put in "declined to answer due to current trade secret".

a. General

i. **Which blockchain / DLT are you building on top of?**

CarbonUSD is an ERC-20 token on Ethereum. The Carbon team is pursuing interoperability with other blockchain protocols and plans to eventually deploy their algorithmic stablecoin protocol on Hedera hashgraph, a new high throughput public network.

ii. **How does the stablecoin work?**

1. CarbonUSD is a compliant, price-stable cryptocurrency that is one-to-one backed with USD. To create new CarbonUSD tokens, users can make fiat deposits with Carbon's partner bank, Nevada-based Prime Trust. Frequent third-party attestations by leading auditor Cohen & Co. verify publicly that each token is backed 1-to-1 by escrowed funds in a trust account.
2. Carbon's new whitepaper details a novel mechanism for transitioning to a hybrid algorithmic stablecoin model once CarbonUSD reaches sufficient scale as a fully fiat-backed token. More details regarding the algorithmic stablecoin will be released shortly after it has been rigorously tested.

iii. **What is the purpose of your coin? What does it aim to achieve and which problems does it solve?**

We wanted to create a compliant, transparent stablecoin that people could easily understand and trust. While integrating an algorithmic stablecoin is apart of our long-term vision, we believe it is much easier to bootstrap trust by starting off with full fiat-collateralization.

- iv. **When we say something is stable what do you think it means? And when it comes to monetary policy specifically?**

A stablecoin should be easily redeemable for the corresponding amount of assets it is pegged to. In practice, most algorithmic stablecoins rely on a few centralized exchanges to provide liquidity to fiat.

- v. **What is your revenue model?**

Carbon takes a 0.1% fee on withdrawals to fiat in order to cover operational costs. Eventually, we intend to whitelist an algorithmic stablecoin, enabling shareholders to capture value when the total supply expands due to high demand.

b. Launch & marketing

- i. **What does the market need to be confident in the stability of your token?**

The market needs confidence in our legal framework to ensure Carbon's reputable banking and auditing partners do not act maliciously.

- ii. **How are you bootstrapping to that level of confidence?**

We believe the market will feel comfortable with our level of compliance and transparency at launch. It is much more difficult to bootstrap trust in an algorithmic stablecoin from day one.

- iii. **What are your go-to-market strategies?**

Declined to answer due to current trade secret.

c. Economics

- i. **What is your coin stable with respect to?**

CarbonUSD is stable with respect to the U.S. Dollar.

- ii. **How much volatility can this peg withstand? Is that the same for upwards and downwards pressure? How wide is the band of behavior it can support?**

Because it is 1-to-1 backed by USD with low-friction redemptions, any price-deviation on exchanges may present an arbitrage opportunity. We expect volatility on exchanges to remain minimal as long as there is sufficient arbitrage liquidity.

- iii. **How easy is it to analyze the band of behavior from which it can recover?**

No analysis is necessary for our fiat-backed token, since black swan events are not a risk. We assume the market will take advantage of arbitrage opportunities when CarbonUSD is trading below or above \$1.00 on exchanges.

- iv. **How expensive is it to maintain the peg/stability mechanism?**

--

- v. **How transparently can traders observe the true market conditions?**

CarbonUSD does not rely on an external reserve, since each token is backed 1-to-1 by real USD. In fact, we believe starting off with full fiat-collateralization is essential for bootstrapping the market's trust in CarbonUSD in a way that is not dependent on the size of an initial reserve.

- vi. **Which monetary theory (theoretical) assumptions do you think are not true and how does your protocol account for that?**

As a fiat-backed stablecoin, CarbonUSD does not make assumptions regarding monetary theory.

vii. Does your stablecoin supply scale in response to demand? If so, how?

When there is an arbitrage opportunity, a user may feel incentivized to create new CarbonUSD by wiring money to our banking partner, who will send the user a corresponding amount of newly minted tokens.

viii. Who provides the capital to maintain exchange rate peg? How are they compensated / Why do you think they would continue to lock up capital, given other investment opps?

On exchanges, we expect any price-deviations will present a clear arbitrage opportunity to traders, who will in turn minimize price-volatility.

ix. An eventuality plan in case of a “black swan” event.^{1,2} The 1% case will happen eventually.

Because each token is fully collateralized by fiat, CarbonUSD is not at risk of a black swan event. This is one of the reasons we assume the market will initially trust a fiat-backed stablecoin more than algorithmic models. The challenges for most algorithmic stablecoins will revolve around bootstrapping trust in order to reach a scale where the risk of black swans events becomes significantly lower.

d. Tech

i. Are any novel consensus mechanisms used, over and above the underlying blockchain?

No. The CarbonUSD smart contracts are written in Solidity and run directly on the Ethereum Virtual Machine.

ii. What transaction throughput can the blockchain currently handle and how does it plan to scale? Do its plans coincide with your plans for your estimated demand?

One of the reasons we are pursuing interoperability with other blockchains is due to the scaling issues facing Ethereum, which can currently handle roughly 10 transactions per second. Emerging platforms such as Hedera hashgraph, on the other hand, aim to support hundreds of thousands of transactions per second. EOS currently supports roughly 3000 transactions per second and is expected to increase in throughput by an order of magnitude in the coming months. High transaction throughput is necessary for CarbonUSD to become a truly global medium of exchange.

iii. What tradeoffs does your protocol make and why did you make those tradeoffs? (supply/demand, temporarily peg breaking) (censorship resistance) (privacy tradeoffs) (accuracy of present market data and ease of manipulation of the data feed protocol uses (responsiveness of market and ease of manipulation)

Some algorithmic stablecoins present really interesting theoretical properties such as censorship resistance and the ability to scale to a market cap that is beyond what seems feasible for a fiat-backed stablecoin. On the other hand, fiat-backed stablecoins have an easier time bootstrapping trust and liquidity since they are relatively straightforward and not as experimental. With these properties in mind, we have developed a novel token structure, called a “meta-token”, in order to seamlessly transition to a hybrid algorithmic stablecoin model once CarbonUSD reaches sufficient scale as a fully fiat-backed token.

¹ https://en.wikipedia.org/wiki/Black_swan_theory

- iv. **Are there any centralized components of your system? Would any of these be easy for govts to shut down?**

We are launching with a fiat-backed stablecoin, which has a few centralized components, including our banking partner and our auditing partners. Ultimately, the market must trust them and the robust legal framework that ensures our high level of compliance.

- v. **Does your protocol require information outside the blockchain such as a feed of price data? If so, how does this oracle work? Who manages it, what are the incentives for managing it, and what happens if the data they provide has a glitch?**

Carbon's fiat-backed stablecoin does not rely on a decentralized oracle.

- vi. **Which participants can see which transactions? What is the data and metadata available, and to whom? How does this impact privacy?**

CarbonUSD is a token on Ethereum, a pseudonymous blockchain where an account can be linked to its transaction history but not necessarily to the identity of the account owner.

- vii. **Are you doing anything with formal verification? Smart contracts used?**

New Alchemy, our smart contracts auditing partner, applies formal verification techniques.

- viii. **What is the rebase period? (Length of time between currency adjustments.)**

We are launching a fiat-backed stablecoin and will release details regarding our algorithmic stablecoin shortly after it has been rigorously tested.

- ix. **Can we make this automated?**

--

- x. **Do we use a smart contract, or network rules of the blockchain operators?**

We believe that most components can be automated over time. Carbon's smart contracts are designed to have minimal complexity with maximal adaptability; however, it is important to note that each smart contract upgrade has a programmatic delay before deployment. This upgrade delay serve to give users sufficient time to withdrawal funds if they do not feel comfortable with a pending change to the smart contracts.

e. Regulation

- i. **What are your perceptions of local and global regulation in supporting stable coin, asset backed token economies?**

We recognize we are in a nascent space with a developing regulatory landscape across many jurisdictions. We are working closely with regulators and multiple law firms in order to ensure Carbon remains as compliant as possible.

- ii. **What could be done to improve regulation in terms of speed, quality, value for your company?**

Clearer guidance and oversight by various regulatory agencies could significantly accelerate the rate of innovation in the blockchain industry. Because CarbonUSD may become integrated into many distributed applications, we are deeply aligned with the success of the industry as a whole and pay close attention to its dynamic regulatory landscape.

f. Testing

- i. **What kind of simulations have you done and what have they helped you learn? (simulating broad array of market conditions)**

1. **Mental models for simulations**

2. **Econometric models**
3. **Agent-based Modelling / Computer simulations**
4. **Other (Please describe)**

For our algorithmic stablecoin model, we are currently testing via computer simulations using Geometric Brownian motion techniques. When designing these simulations, we have focused on reducing our assumptions in order to better reflect reality. The simulation results will be released soon. In addition, we plan to use formal methods in order to construct a more rigorous analysis with stronger guarantees.