COIL

Lite Paper

Revision 2.1

What is COIL?

COIL is a dynamic yet predictable decentralized elastic supply token redesigned to solve market manipulation and appeal to all.

COIL is an elastic supply cryptocurrency with a built-in 23 hour rebase mechanism. The supply of COIL tokens "coil and recoil, "which adjusts to the supply and demand of the market. Think of COIL as an automated Central Bank that expands and contracts the current monetary supply, based on economic supply and demand factors. COIL's target is the 2020 USD adjusted for CPI Inflation. It is designed to rebase every 23 hours and self-regulate to keep in-line with current supply and demand, all done via Smart Contracts. When the price is over $1.05 Coil automatically increases supply and distributes it to all addresses. When the price is under $0.95 Coil automatically decreases supply of all addresses. This is designed to create buying and selling pressure to push COIL back to its target price. The rebase formula is ((Oracle price – Target Price) / (Target Price)) * 10 = Rebase %. With that said; COIL is not a stable coin. Although COIL is designed to coil and recoil around the target price it will also go through expansion and contraction phases just like all markets. Especially in the younger days, it will be prone to larger volatility. However, as COIL grows larger in market cap, age, supply, and liquidity it will be less prone to volatility and become a much more stable asset. This will make COIL very beneficial in decentralized finance as a collateral asset, as well as a general hedge to hold in portfolios, since COIL is much less correlated to Bitcoin and most cryptocurrencies.

What is important to note about COIL is that it is also non-dilutive. If you buy into the COIL network, and never buy or sell and just hold, your share of the network will never change. You may have more or less coins, but your % share of the supply and market cap will not change. Unlike Bitcoin where the supply is finite and price is volatile, the price of COIL will generally hover closer to $1 especially as it matures. COIL transforms the price volatility of BTC into supply volatility. The future of COIL will be for use on many ecosystems including Polkdot, Tezos, Cardano, and others. We see COIL as becoming a decentralized – self-governing – less correlated – more stable asset and a backbone of DeFi and cryptocurrency as it grows.

Elastic supply vs. Proof of Stake

Elastic supply fixes the centralization of power that happens with Proof of Stake (PoS) cryptocurrencies. Currently in PoS cryptocurrencies, the larger holders tend to hit more stake rewards and gain more and more coins or tokens within the network. Thus increasing their market share and decreasing the smaller holders share. What happens over time, those larger holders become more and more powerful which leads to these PoS networks becoming more centralized and controlled by fewer holders. Over the long term, this can be very dangerous. COIL, because it is not dilutive, rebases and debases every address. Your share of the COIL Network never changes if you just hold regardless of if you have more or less tokens. Unless you are trading, or supporting the network through liquidity, this makes the playing field even and keeps the project more decentralized in the longer term.

Tokenomics

COIL has a target price of $1.00 which is the 2020 value of the USD adjusted with CPI. Every 23 hours COIL has an automatic rebase that adjusts to align with supply and demand. Think of COIL like an automated Central Bank that expands and contracts its supply, based on supply and demand. COIL's Smart Contracts are openly available for public viewing and auditing. COIL will generate data feeds from Chainlink and other oracles where it will be based on a 23 hour weighted average. Our rebase mechanism distributes new tokens to all wallets holding COIL at the appropriate rebase %. This does not mean COIL will always be stable at $1.00, but will always coil and recoil around its target.

Coil Rebase

The COIL rebase system is designed to rebase itself every 23 hours. Some may ask why the 23 hour timeframe was implemented over the common 24 hour mechanism, or why not random? We discussed all of these ideas; however, we came to the conclusion that our method is the fairest way that will appeal to the most users. Our method ensures that token holders in a certain time zone are not always receiving a rebase at 3 AM when part of the world is sleeping. This allows all parts of the world to rotate in experiencing a rebase in their peak hours. Thus, allowing a fair opportunity of trading and arbitrage for all time zones. Each day the rebase time in your time zone will be one hour earlier than the previous day. i.e. Today's distribution may be at 3 UTC, but tomorrow's will be at 2 UTC, and so forth. We believe our 23 hour system gives exchanges and traders the predictability they need while also ensuring an equal opportunity no matter their geographical location.

As mentioned above, we also discussed a random rebase. However, this really was not much of a consideration. Although it may sound good, we believe this is flawed for a few reasons. Firstly, the main benefit of this is to stop whales from manipulating the market. On paper sounds great, but when you dig a bit deeper you find the flaws. The issue with whales is not the predictability, but rather the fair and equitable distribution at the onset. This is why COIL is capping all public release tokens per address to a max of 100 ETH. This solidifies our launch being more fair and decentralized, and puts COIL in the hands of more users in a more equally distributed manner. Sure, we could have raised more money not doing this, but we are building COIL to succeed in the long term, and our main goal is to make it as fair and decentralized as possible, which will in turn build a stronger stable base. If someone wants to buy in and become a huge COIL whale, they have to purchase and build their holdings on the open market. Another issue with the random rebase idea is whoever sits by their computer all day can wait for the rebase to come in and buy or sell immediately. Bots can still be programmed to watch addresses and when they detect a change, buy or sell. So, are you really even accomplishing anything with this random rebase idea? We think not. Let's dig a bit deeper. What if someone is able to figure out the random rebase function and can exploit it? This could potentially open up the project to another possible attack vector.

We believe in being 100% transparent. This means with our code, with our distribution, and with our ideas. We actually think the predictability is necessary because it allows COIL to appeal to every single type of token holder: short term traders, long term traders, yield farmers, arbitrageurs, etc. COIL is built to appeal to the masses. A random rebase function alienates some of these DeFi users, arbitrageurs, and short term traders. Not to mention, also making it harder to use as DeFi collateral. For long term success this is not ideal; you need to appeal to every single type of token holder. Part of what makes Bitcoin valuable is its predictability. You can know what the max supply will be, and even closely calculate how many Bitcoin there will be on each day. COIL is built dynamic, fair, predictable, decentralized, and for all!

Rebase calculation: ((Oracle price – Target Price) / (Target Price)) * 10 = Rebase %

Rebase Scenario	**Debase Scenario**
COIL Oracle Price: $2.00	COIL Oracle Price: $0.80
COIL Target Price: $1.00	COIL Target Price: $1.00
COIL Tokens: 100	COIL Tokens: 100
2.00 - 1.00= 1	0.80 – 1.00 = -0.20
1 / 1.00 = 1	-0.20 / 1.00 = -0.20
1 * 10 = 10.00	-0.20 * 10 = -2.00
Rebase % = 10.00%	Rebase %: -2.00%
New Balance = 110 $COIL	New Balance: 98 $COIL

Coil Spring

Within the first couple weeks after launch we will be releasing our Coil Spring, which will incentivize liquidity on Uniswap by paying out rewards from the Liquidity fund. We have budgeted 1/5 of our token supply to show we are committed to continuing to grow and incentivize liquidity for many years to come. We believe a large pool of liquidity is essential in the success of any project, and not only will we be incentivizing liquidity in our pools, we also have a unique twist to our Spring, which will encourage that liquidity to **remain** in the pool and become more predictable. We believe this idea is ground breaking and we can foresee many trying to replicate this approach.

One of the most important aspects that projects often overlook is liquidity. Oftentimes, it is very hard for new projects to generate enough liquidity to be successful. It is why many projects did and do IEO's to link with exchanges, but they also paid a hefty price for this. HEX was one of the first projects to figure out Uniswap and how important a liquidity pool is. Then came AMPL and their geyser, which created a huge boom in liquidity as well, but it has a few flaws. First, AMPL did an IEO, and most of AMPL was largely distributed to big investors and VC firms, who control much of the supply (just under 50%, while only 10% was sold to the public). Over time these large wallets can manipulate and bleed out the smaller investors through long periods of debases. The liquidity in the geyser can be removed from the pool causing massive fluctuations in liquidity and volatility scaring the market and playing right into their manipulative hands.

The COIL Spring was developed to solve this issue. The Spring will add a HEX type of CD system on top of the AMPL geyser. Users will be able to opt into the Spring by providing liquidity into the Uniswap pool. In return for providing the ETH and COIL liquidity, users will receive a V2 token which they can then stake and put into the Spring. The users are able to choose how long they would like to provide liquidity- from 1–90 days. The longer they provide liquidity, the larger the rewards. Once your time is served you can withdraw your full balance (also subject to rebases + the rewards). The Spring adds a unique twist to this liquidity not seen in crypto. If you elect for 90 days, but decide to pull your liquidity after 10 days, you will pay a large penalty that can eat into your principle. This penalty is then distributed to all of the good actors on the network increasing their rewards.

What makes this idea of the Spring so powerful is that it allows liquidity to become more predictable and chartable. People are able to map out when large amounts of liquidity enter or leave the pool and thus make much more logical decisions. This predictability in the liquidity will lead to less volatility, while also solving some of the manipulation issues because it designs a system that rewards good actors of the network and penalizes bad actors of the network. Those penalties are then redistributed to those good network actors that do as they promised.

Let's look at an example of how pool stake weight is found:
Imagine there are two users in the system, Alice and Bob.
Alice has staked 10 tokens and promised 10 days.
Bob has staked 5 tokens and promised 30 days.
Alice_stake_weight = 10 tokens * 10 days = 100
Bob_stake_weight = 5 * tokens * 30 days = 150
Global_staking_token_time = (Alice_stake_weight) + (Bob_stake_weight) = 250
Alice owns (100 / 250) = 40%
Bob owns (150 / 250) = 60%

Now we have a few things to note:
You only receive rewards when you unstake a contract that has fully expired. If you unstake a contract that is not fully expired, not only do you not receive any portion of the accrued rewards, but it also subtracts a penalty amount from your original principle. The penalty amount goes into the unlocked pool, increasing the ROI for everyone else, and the global stake weight goes down as your stake weight is negated. This is checked on a per contract basis. So, if you cancel all of your contracts at once, and one of them is expired and the other not, you will receive the reward amount of the other contract, but the whole penalty amount will be taken out of what you receive back. The reward transaction is separate from the transaction that sends your original coins back to you.

Overall Example:
Contract 1: 1000 Coil (not expired, penalty is 200 coil)
Contract 2: 800 Coil (expired, reward amount is 300 coil)

Cancel Both:
1 transaction of 300 Coil to you (300 reward) (Contract 2)
1 transaction of 1600 Coil to you (1000 + 800–200) (Contract 1)

Withdrawing gives you two transactions. The first pays out your rewards (since you completed Contract 2) and the second is your principle. In this case 800 Coil from Contract 2 you get back, but since Contract 1 did not expire and you withdrew, you get back your 800 Coil minus the penalty for Contract. The penalty is % of time left / 2 * rewards expected.

Let's assume you have 1000 Coil, and you elect for 90 days. Let's also assume based on your share of the pool, you would receive 1000 extra Coil if you finish your 90 days.
So if you elect for 90 days but only finish 10, you have (80/90)/2 * 1000
Penalty = (Time Unserved / Total Signed Up Time) / 2* Expected Rewards
(80 / 90) /2 * 1000 = 444.44 Coil

This penalty then distributes to all of those in the Spring. The penalty portion of the V2 token goes to the Ecosystem fund, which every 7 days takes the share of ETH and buys COIL on the market, then adds the COIL to the Spring rewards. This in turn benefits all COIL holders (buying coil on market), while also redistributing those rewards to the trust network supporters.

Designing the Spring like this encourages good network behavior by rewarding those that keep liquidity in for the duration they say, while discouraging bad network behavior leading to more predictable liquidity, chartable liquidity, less volatility, and less manipulation. We believe the system we have designed is like nothing in this space. It is unique and mimics systems in the real world.

We are excited for the cryptocurrency world to meet and embrace COIL. Cryptocurrency and DeFi is in its infancy, and growing every day. In fact, we believe the space is growing so quickly more and more use cases will pop up for COIL that have not even been thought of or discovered yet. It will be an exciting journey as we transform the entire cryptocurrency space with a dynamic, fair, decentralized, and predictable elastic supply currency. Just as crypto evolves so will COIL, in fact, we have seen in the last few years' privacy becoming much more important in the crypto space and especially in DeFi. Not only will COIL be vital in current crypto ecosystems, but COIL can also be bridged into the private ecosystems of tomorrow pioneering a whole new world of Private DeFi many have not even thought about yet. COIL is built to be a decentralized hedge asset, collateral asset, and a backbone asset in the ecosystems of today, while also being a pioneer asset in the ecosystems of tomorrow.