

Ethfinex Liquidity Token

Creating the world's most liquid exchange for digital assets.
Built for the Ethereum community, using Ethereum.

Ethfinex Inc

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Value Proposition

A new token will act as a loyalty reward for token market makers on the Ethfinex exchange. This will incentivise the creation of the most liquid exchange for trading tokens and tethered assets on Ethereum.

The loyalty tokens are similar to loyalty points and are earned in proportion to users' volume of trades as market makers.¹ Loyalty tokens will entitle holders to claim rewards from fees generated by Ethfinex, and to participate in future exchange governance. Gradually, as more tokens are earned, the ownership of the exchange will become decentralised, and Ethfinex will be owned by its customers. The loyalty token is referred from here onward as the Nectar token or NEC.

Market Makers:

Larger customers of the exchange adding liquidity to the market, acting as makers, will earn a stake in the future of the platform. This ensures they benefit from the value they create and have an incentive to continue to market make on Ethfinex. Accordingly they may also be able to have a large influence in future governance and development.

Smaller Customers:

Customers with lower trade volumes will benefit from the smaller spreads and greater thickness of highly liquid markets, and have the opportunity to obtain loyalty tokens in the platform.

Companies and Projects:

A new generation of projects are building on Ethereum. Those projects require exchange services between tokens, Ethereum, and traditional fiat money. These projects may interface with the Ethfinex liquidity pool either by means of standard APIs or several decentralised exchange protocols. In doing so they may earn loyalty tokens and become stakeholders in the Ethfinex ecosystem, as well as be involved with its governance.

¹Makers are users that add liquidity to the market by posting bids and offers, as opposed to those that take liquidity by matching with these bids and offer.

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1 Introduction

1.1 Background

After the Bitfinex hack in 2016 [2], when approximately US\$72 million in bitcoin was stolen, the need to decentralise funds in the interests of security and customer protection was brought home to all reasonable observers. Significantly more funds were stolen in the security breach than were in active use on the platform at the time.

In response a tradable token—the BFX token—was given, without release or waiver, but subject to conditions on tradeability, to victims to address their losses. The tokens were subordinated, limited-recourse, and contingent liabilities of Bitfinex. The tokens gave holders the opportunity to exchange them at face value for shares of the capital stock of iFinex Inc., to eventually be paid back out of future exchange operating profits at one hundred cents on the dollar, or to dispose of them in the market at current market prices. Initially, these traded at a heavy discount, representing customer skepticism about whether they would ever be redeemed, given the history of other cryptocurrency exchange security breaches and the magnitude of the Bitfinex hack.

When Bitfinex began fully redeeming the BFX tokens for USD and exchanging them for equity, confidence returned to the market, as reflected in the market price of the tokens. Trading volumes on the platform started returning to previous levels. These positive market signals demonstrated the power of decentralising ownership to a community of interest through tokens. Many Bitfinex customers and supporters now have a stake in seeing Bitfinex succeed and therefore have an additional incentive to trade on the platform. The benefits for any platform dependent on network effects—as are all exchanges that rely on liquidity—are clear.

Bitfinex has now spun off the Ethfinex team. Ethfinex’s vision is to create the world’s most customer-centric and liquid digital asset exchange platform. Ethfinex will build on the decentralisation lessons of Bitfinex to create its own liquidity incentive token on Ethereum, and will pioneer a hybrid decentralised exchange model. This platform will not only be for or used by the Ethereum community. It will be *of* the Ethereum community: creating, using, and contributing back smart contract code and tools.

The Ethfinex team has the necessary industry expertise and existing development experience. Having learned the lessons of Bitfinex, we anticipate delivering the first phase of Ethfinex in months not years. We are committed to ensuring that the platform will have the most liquid market anywhere. Ethfinex already has a successful trading engine and tools, and over four years of experience in the digital token space. Like Bitfinex, Ethfinex will provide the most user-friendly experience in the marketplace.

1.2 Team and History

Ethfinex is being built by a team with a history of innovation in the public blockchain space:

Bitfinex (<https://bitfinex.com>) was started in 2013. It is one of the most advanced digital token exchanges, and is the largest exchange by volume for Bitcoin against the US Dollar. In addition to providing a suite of order types to help customers optimise their trading strategies, Bitfinex also provides a peer-to-peer financing market for financed trading. Bitfinex's strategy focuses on providing unparalleled support and tools for professional traders.

Tether (<https://tether.to>) provides tokenised traditional currencies on block-chain technology. Tether was originally built on the bitcoin blockchain using Omni, but now also offers Ethereum-compatible tokens. Tether will provide some of the key infrastructure for Ethfinex and decentralised exchange protocols.

2 A New Vision: Ethfinex

2.1 A Decentralised Community Hub and Exchange

The number of tokens and assets being tokenised on top of the Ethereum platform is growing fast, and they are proving themselves to represent a disruptive revolution to traditional business models. Alongside this growth is a demand to be able to trade these tokens and contribute to new projects. The core value of these tokens is the communities built around them. However, high quality information and discussion about these communities and token projects can be difficult to find. Ethfinex's vision is to create a community, resource, and information hub with a user reputation system, and simultaneously provide the most advanced, highly liquid, and secure exchange trading platform available.

Ethfinex will build a community hub for developers, traders, and enthusiasts. It will enable discussion, study, and trading in the Ethereum ecosystem. Traditional centralised exchanges sit on a layer apart from blockchains, but Ethfinex will reflect the nature of the Ethereum ecosystem itself, building smart contracts and decentralisation increasingly into everything it does. Our vision is to steadily move towards a completely decentralised platform, and to provide tools and modules that will interact with and contribute to smart contract development and projects.

There has been a flurry of new projects aiming to deliver 'decentralised' exchanges. In this context the primary use of the term 'decentralised' usually refers to a platform not requiring central custody of funds or the trust of a third party in arbitrating trades and disputes. Ethfinex also subscribes to this vision of the future. However, we recognize that there will be several intermediate steps on the way to full decentralisation. We cannot do this alone, and Ethfinex will contribute to and collaborate with other decentralised exchange protocols, e.g. 0xProtocol [1], as appropriate.

To accelerate development of trustless exchange, Ethfinex will therefore pioneer a hybrid decentralised model for exchange. We aim to provide an experimentation zone where decentralised exchange protocols can learn, test, and receive feedback, and grow from Ethfinex's pool of liquidity. This approach gives Ethfinex the flexibility to be agnostic of technology and experiment with new models of decentralised exchange as they emerge and integrate them into the platform.

2.2 Timeline and Journey

Step 1: Initial Launch

- Creation of a mainly centralised exchange platform for Ethereum-based tokens, including fiat and BTC tethers, building on Bitfinex's best in house trading platform (ensures high liquidity and transaction speed and scalability from the start as well as using decentralised microservices architecture with the in house protocol built by Bitfinex, Grenache).
- Token sale and token community discussion platform and investment hub.
- Nectar token creation, initially mainly owned by Ethfinex but increasingly decentralised ownership, with rewards held in token smart contract.
- Integration with several projects and infrastructure in the Ethereum ecosystem (i.e. withdrawals and deposits using the Ethereum Name Service)[3]

Step 2: Hybrid Decentralised Exchange

- Provision of new APIs and smart contract tools focused towards projects in the Ethereum ecosystem as well as oracle functionality for smart contracts (for example providing modules for Ethereum based asset management platforms).
- Funds have the option of being held decentralised in user's own Ethereum wallets until point of execution of trades.
- Planned further integration with other potential partners in the Ethereum ecosystem. There are several planned partnerships in motion, including Ethereum-based fiat tokens with Tether.to , and these will be announced when the integration details are fixed.

- Integration of 0x protocol and several other decentralised exchange protocols, to allow parties to interface and place non-custodial orders, trading against Ethfinex user's liquidity.
- Nectar token governance advisory board set up as customer ownership increases.

Step 3: Evolution

- As Ethereum matures and becomes more scalable, with proof of stake, sharding and raiden all in the pipeline, and as other technologies emerge, the platform will transition to full decentralisation of funds, with no requirements for funds to be in the custody of Ethfinex.
- Ethfinex via the Nectar token will become the community owned hub for token trading in the Ethereum ecosystem, with the highest liquidity, most advanced trading tools, and offering the best user experience.

3 Building a Hybrid Decentralised Exchange

3.1 Challenges of Decentralised Exchange

Current approaches to exchange settlement and order matching on blockchain have several challenges to overcome:

- latency of on-chain orderbook
- prevention of front-running
- expense of on-chain transactions
- current scalability limitations

In addition to these basic challenges, the speed and complexity requirements of the most sophisticated trading customers mean that practical implementation of fully decentralised matching and settlement on-chain still requires further development. Margin trading, involving a peer-to-peer financing market on blockchain, is a further challenge that is as yet unsolved, but is essential to attaining large scale and liquidity.

For some aspects of exchange platforms such as storing order books, we believe it can be unnecessary, inefficient, and expensive to use a blockchain, and it should not be treated as one-size-fits-all solution. There are alternative ways to attain the benefits of decentralisation such as additional security and resistance to DDoS attack. This is why, for example, our team has developed a microservice architecture called Grenache. This splits the platform into many microservices that use distributed hashables for peer-to-peer service discovery. <https://github.com/bitfinexcom/grenache>

3.2 The Hybrid Blockchain Exchange Model

The Ethfinex Hybrid Exchange Model will implement blockchain solutions where they offer the best solutions, as and when these are scalable and mature. The first major area where this is desirable and possible is for on-chain trade settlement without custody of funds.

Figure 1 shows a simplified architecture of decentralised exchange protocols and how they allow their users to trade with Ethfinex users. Ethfinex will provide a generalised set of APIs and contracts through which other protocols can interface with Ethfinex. As the field of on-chain exchange matures, Ethfinex will be able to provide a zone for experimentation, allowing new protocols to access Ethfinex user's large liquidity pool and trading opportunities. This will accelerate the learning process for new decentralised exchange projects and lead to the development of optimal decentralized exchange tools and protocols.

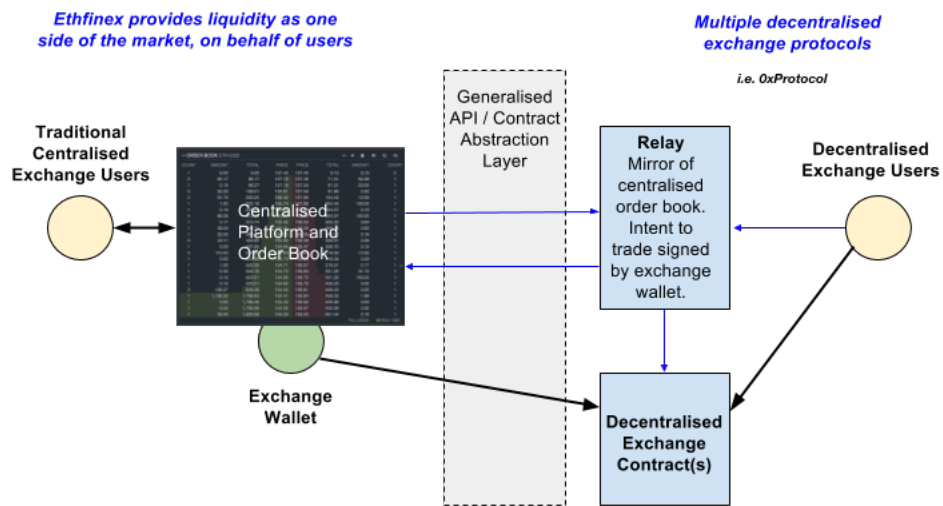


Figure 1: Simplified hybrid architecture overview. Blue arrows represent information only flows. Black arrows represent on-chain transactions sending funds.

1. Traditional users who value the high speed, financed trading capabilities, sophisticated features, and user experience of a centralised exchange continue to use Ethfinex in the way that they currently use other centralised exchanges, but will benefit from the additional liquidity provided by decentralised users.
2. The standardised set of APIs and contracts provide an interface which then allow any decentralised exchange protocol to trade with the Ethfinex order book and with each other.
3. The Nectar token is integrated into the interface between the central exchange and remote decentralised exchange portals, incentivising on-chain liquidity providers who trade with Ethfinex by rewarding them with loyalty tokens.
4. Decentralised exchange users can trade with a large liquidity provider, without creating accounts at Ethfinex or trusting a third party with custody of their funds. Ethfinex therefore leverages its liquidity to act as a market makers for these users, as well as for Ethereum-based projects with requirements for on-chain exchange settlement.

This new model has it's own challenges to overcome when compared with fully decentralised exchange. In particular these are related to risks of front-running and dual execution. A hub and spoke architecture between the central Ethfinex order book and many remote order books will be employed.

4 Nectar Token

The Nectar token (NEC) will be at the heart of the trading platform. It will be compatible with the Ethereum ERC20 standard [4]: this is required to link the Nectar token to any decentralised exchange protocols which interface with Ethfinex, and therefore reward their users for the liquidity they add.

The token is not to raise funds, or to fund or fuel crowdsales. The tokens are not sold by Ethfinex. They are given for free as rewards to users registered with the market maker reward scheme.

4.1 Functionalities

The purpose of this loyalty reward scheme is to foster liquidity and market efficiency with thick order books and minimum spreads on every trading pair. Decentralizing an exchange means, in the long term, decentralizing its ownership. Having a network of users that own the exchange will incentivize its owners to remain loyal users. For this purpose, the Nectar Token combines three core functionalities:

1. Loyalty points entitle their holder to a loyalty reward, held in a smart contract (the Liquidity Token Smart Contract) and can only be redeemed, in part or in whole, upon request, through the redeem mechanism.
2. Loyalty points enable their holder to exercise an influence on future governance of the exchange. Indeed, in addition to feedbacks and advices they may give, any person or group of persons holding 5% or more of NECs will be entitled to elect a representative in the advisory board.
3. Loyalty points can be traded on a secondary market among Ethfinex registered users.

This will be achieved through the following mechanism:

- Market makers trade throughout the month on the platform.
- 50% of total trading fees paid by the maker and the taker are directed into a smart contract.
- At the end of the month the NECs are issued, and distributed to market makers in proportion to the total trading volume they conducted as a maker during that month.
- A redeem mechanism will allow holders of the token to claim a reward at any time, using up their tokens (i.e. a user who holds 5% of tokens issued would be entitled to claim up to 5% of the reward held in the contract).
- If the market maker wishes, rather than redeem the tokens instantly they can then choose either to hold their tokens longer term, or to sell them to another market maker.

The token generation event occurs every 30 days, and NECs are issued to the market makers who traded during that period. This means that in the case where no redeeming of tokens occurs, the total supply always grows each month. Ethfinex itself has an initial supply of tokens which does not grow, and therefore its percentage ownership falls over time as new tokens are created. Details of the implications of this model are explored later on under section 5.

4.2 Governance

The owners of the token will also be able to advise on governance of the token and related aspects of the platform. This governance mechanism will be particularly important in ensuring the details and implementation of the token can be refined after its launch. Defining the perfect liquidity incentivisation mechanism will be impossible without testing and feedback in real markets, and the governance will complete the loop in allowing improvements to take place.

Initially Ethfinex will retain the majority of the NECs, in order to be able to refine the reward and issuance mechanism. However over time as more of the

ownership becomes decentralised to users, the governance model will allow large token holders, or coalitions of smaller token holders, to elect representatives who will sit on an advisory board.

Any individual or party owning 5% or greater of NECs will be entitled to a elect a board member.

4.3 Restrictions

NECs are part of a loyalty points scheme, where market makers receive tokens for free, without release or waiver, in proportion to the volume of trades where they act as a market maker. These tokens can be redeemed for rewards from the Nectar token smart contract at a later date. NECs are not securities.

The tokens can only be earned and held by members who have registered with the Ethfinex market maker loyalty scheme. Restricting token ownership to members of the loyalty scheme will be achieved both off and on blockchain, through whitelisted Ethereum addresses or other means. All members are subject to full verification by Ethfinex. Exchanging NECs will not be possible except with other registered members of the Ethfinex loyalty scheme. Moreover U.S. Persons, as defined in Bitfinex's terms of service, may not be members of the loyalty programme, may not receive NECs, and may not, therefore, trade in the Ethfinex market for NECs. Any trade outside of the NEC market on Ethfinex is void.

5 Token Economic Model

Further details about the economic functionality of the token are explored, as well as details of the operations and issuance.

T_0 , initial number of tokens in existence (all owned by Ethfinex)

T , total supply of tokens

F_T , total number of fees collected by the Liquidity Token smart contract

V_A , trading maker volume of a specific user A over a month period

V_T , total maker volume of all users over a month period

N , total new tokens created each month

N_A , new tokens earned by maker A

5.1 Issuance

The issuance of newly earned tokens happens to market makers on 30 day cycles according to the following equations:

$$N = V_T \frac{\frac{T}{1000}}{\left(\frac{T_0}{1000} + F_T\right)} \quad (1)$$

$$N_A = N \frac{V_A}{V_T} \quad (2)$$

Equation 1 makes the number of tokens created each cycle, N , a function of the total fees collected by the platform so far, F_T , and trading volume V_T . Each user’s new tokens is their fraction of the total maker volume during that period. This design insures that at the time of issuance the value of the NECs issued (if redeemed instantly to retrieve associated fees) is always less than the fees paid by the maker. This prevents manipulation of the system where users could earn tokens through high volumes of unprofitable trading in order to extract the collected platform fees via the redeem mechanism.

5.1.1 Fee Schedule

Maker: fees are paid at the point of execution when user adds liquidity to the order book by placing a limit order under the ticker price for buy and above the ticker price for sell.

Taker: fees are paid when user removes liquidity from the order book by placing any order that is executed against an order of the order book.

30 Day Trading Volume (USD equivalent)	Maker Fee	Taker Fee
0.00 or more	0.10% - NEC reward	0.20%
50,000.00 or more	0.10% - NEC reward	0.18%
1,000,000.00 or more	0.10% - NEC reward	0.17%
10,000,000.00 or more	0.10% - NEC reward	0.16%
20,000,000.00 or more	0.10% - NEC reward	0.14%
40,000,000.00 or more	0.10% - NEC reward	0.12%
60,000,000.00 or more	0.10% - NEC reward	0.10%

50% of all the fees collected from trading on Ethfinex are paid into the Nectar token smart contract where they part of the reward scheme for Nectar token holders.

N.B. The factors applied in Equation 1 are to account for the 0.10% maker fee, and should ensure the value of the reward is proportional to fees paid while acting as market maker.

5.1.2 Total Supply

Based on the issuance equations an example token supply growth chart is shown in Figure 2. This was re-modelled assuming constant monthly trading volume V_T of 20000 ETH, but varying this will lead to significantly different total issuance and profile. It was also based on the final initial token supply used (13th Feb), $T_0 = 1,000,000,000$ (see Equation 1).

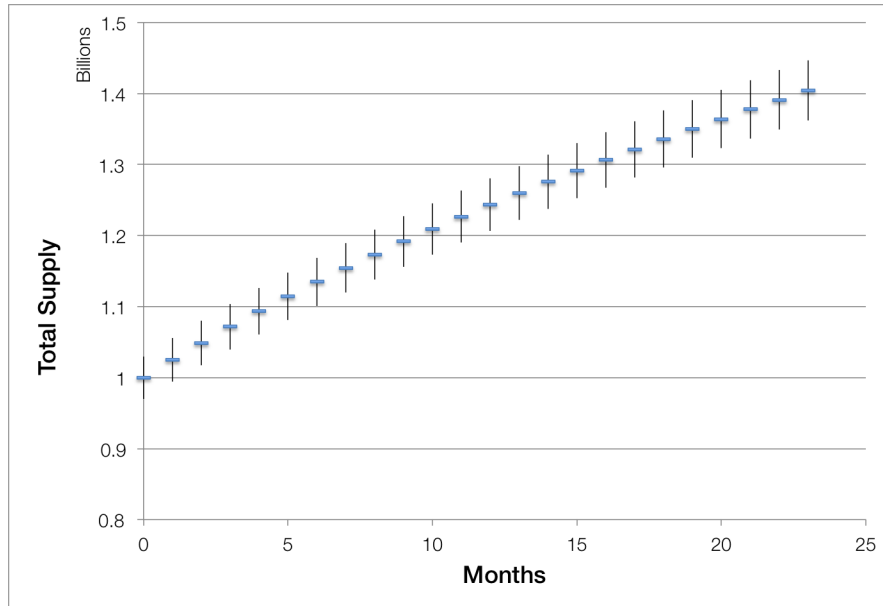


Figure 2: Total supply growth over time

Due to total supply growth, market makers who wish to maintain their percentage stake in the Ethfinex platform must continue to add liquidity to the market to be rewarded with NEC each month.

Ethfinex's percentage ownership of the loyalty points is also modelled in Figure 3 and will fall relative to the total as the supply increases.

Please note that both graphs are estimates only, and due to the inability to accurately estimate variables such as trading volumes and average fee rates these are for demonstration purposes only.

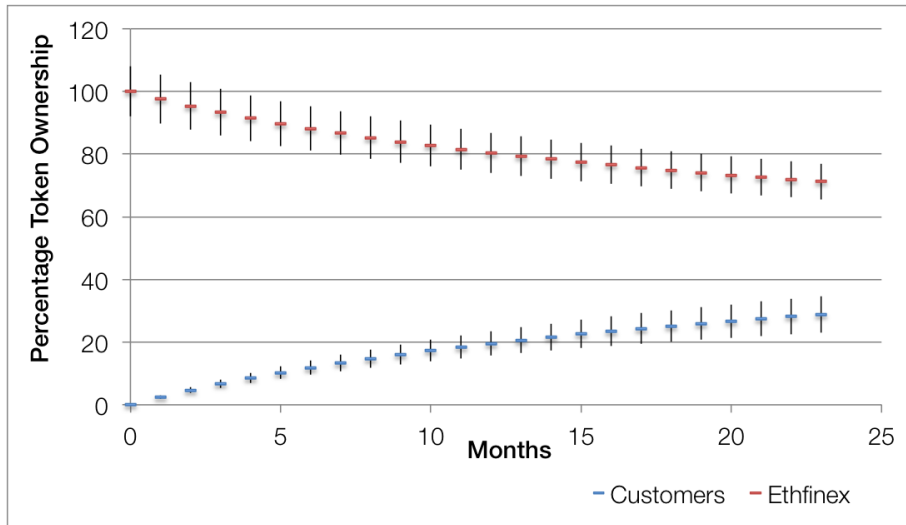


Figure 3: Ownership over time

5.2 Token Redeem Mechanism

The redeem mechanism allows a token holder to destroy their tokens, reducing the total supply, and in return claiming a loyalty reward from the Nectar token smart contract which holds fees generated by the platform.

Given an expectation of continued operations, the redeem mechanism would be unlikely to be used, given that the price of NEC on a secondary market may be a multiple of their underlying loyalty reward value.

However in the case where Ethfinex were to stop operating, the redeem mechanism would become the mechanism for retrieving these funds from the NEC contracts.

5.3 Market Price Dynamics

The major concern for this model are the effects which secondary market price will play on the market maker incentivisation scheme. This is challenging to model given that it depends on the behaviour of the different entities in the market.

In the case where market value of NEC grows such that the value of NECs earned through each trade is greater than the maker fee paid, this could cause unintended consequences: for instance it could encourage market makers to offer unprofitable trades in illiquid markets to earn more tokens. On one hand this would be positive in narrowing spreads in those markets for other users

(particularly if several market makers are competing to earn the NECs), but could also lead to a form of price manipulation.

These dynamics must be observed in practice, and it is likely the initial model will then need iteration. For this reason a governance process for adjustments to the token issuance equation, fee schedule, and other aspects of the platform will be essential.

6 Get Involved

The Nectar token implementation details in this paper are still subject to further change as we execute on our vision. Feedback, reviews, and improvements are therefore extremely welcome, and can be directed to whitepaper@ethfinex.com or submitted for community review in the [/r/ethfinex](#) reddit channel.

If you might be a potential partner please get in contact at partners@ethfinex.com to discuss how we could work together.

We are a fast-moving, dynamic team, and are actively looking for talented individuals to join us. Please email careers@ethfinex to apply if you are as passionate about Ethereum based tokens and the communities around them as we are.

References

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