The FUTR of Crypto

A Futereum Foundation White Paper

Futereum Utility Tokens for Ether (FUTR)

FUTR
FUTEREUM

The FUTR of Crypto

1.0 FUTR & Other Futereum Innovations

1.1 Futereum Foundation Blockchain Build-out Objectives

The Futereum Project has three *Blockchain build-out objectives*:

1) Build a replica Ether-equivalent token with a dramatically-reduced supply for use within a more financially-sophisticated community of adopters (FUTR) in order to expand the use-case of the Ethereum network in terms of initiating new value-events. This is in response to similar expansions of smart-enabled Blockchain technology use-case expansions that have been taking place with respect to the development of currencies such as XRP, EOS, ICX etc.

2) Build for purchasers of the Futereum digital currencies a more equitably-distributed ownership of Ether which is the digital currency of the Blockchain which Futereum is powered by. At the same time, we acknowledge that earlier and more active participants in the FUTR mining process should receive a disproportionate share of this equitable distribution of Ether.

3) Build a range of value-enhanced utility tokens that are powered by the Ethereum Virtual Machine and run multiple Futereum Smart Contracts as a result of harnessing the combination of the primary two aims on PoW-style mining protocol algorithms. Our aim is to empower the value-enhancement potential we believe is inherent in the Ethereum smart contract solution source code and which we think is currently being underemployed to a very substantial degree in terms of the core development of next-generation Blockchain solutions.

1.2 Use of Phi Algorithm to Simulate PoW Mining Effect

The Fibonacci sequence is a numerical order based on the algebraic function *Phi* first discovered by Leonardo Pisano and published the Italian mathematician's 1202 book *Liber Abacci*.

The ratio comprises a mathematical formula whereby the previous two numbers in the sequence combine to give the result of the subsequent answer to the equation *ad infinitum*:

1 + 1 = 2
1 + 2 = 3
2 + 3 = 5
3 + 5 = 8
5 + 8 = 13
8+ 13 = 21
13 + 21 = 34
21 + 34 = 55
34 + 55 = 89
55 + 89 = 114
etc.

The sequence was first postulated by Pisano as a means to understanding the potential infinite increase of rabbit populations in rural areas, and it is today used to underpin many of the world's most sophisticated financial markets trading algorithms.

A wide number of professional Crypto traders also rely heavily and in some cases exclusively on Fibonacci-regressive technical analysis today to formulate alpha-generating trading ideas and approaches.

Futereum Smart Contracts must contain two apparently contradictory functions which must be equally satisfied in order to justify the utility of the tokens that are purchased in the form of Futereum Utility Tokens. Those functions are the ones as set out in our second Blockchain build-out objective:

> Function 1 = The smart contract results in a more equitable distribution of Ether than before it was employed by the user
>
> Function 2 = Initial miners and high-frequency miners of Futereum Smart Contract tokens should stand to benefit more from this equitable distribution

The paradox is resolved by means of employing a Fibonacci equation inside the mining algorithm of the Futereum Smart Contract.

In the event of the Futereum Smart Contract for Ether (FUTR), we employed the equation as an expression of the amount of FUTR an ETH receives in the process of mining the smart contract.

We achieved this by progressively decreasing the amount of FUTR mined per ETH sent to the smart contract as the mining level is increased:

Level	FUTR	FUTR/ETH	ETH
1	1,000,000	114	8,772
2	990,000	89	11,124
3	960,000	55	17,455
4	910,000	34	26,765
5	720,000	21	34,286
6	650,000	13	50,000
7	560,000	8	70,000
8	450,000	5	90,000
9	320,000	3	106,667
10	170,000	2	85,000
Total	**6,730,000**	**-**	**500,067**

In the example above, which represents the actual number of Ether employed in the mining of the FUTR smart contract, 1 million FUTR initially distributed across a range of miners who collectively contribute 8,772 ETH; subsequently, 990,000 FUTR are mined by a total of 11, 124 ETH etc. Naturally, the progressive difficulty (cost) of the mining process is only compounded by any price increase in ETH.

In this way, the Fibonacci equation driving the FUTR mining algorithm of this Futereum Smart Contract creates an identical mining effect to Proof-of-Work (PoW) mining, where difficulty of a coin's mining is subject to two factors, those being the cost of the unit of value being mined and the relative age of the Blockchain at the point of mining.

To date, we have not been able to discover a more efficient mining protocol type than PoW. PoW is such an effective method of digital currency mining precisely because over time it forces the miners into higher cost-per-unit mining equations, resulting in an intrinsically higher cost (price) per coin. Economically this process produces a greater expansion of the network underlying the mining process.

This PoW-likeness of the FUTR does not in itself result in a more equitable distribution of Ether to the FUTR miners however. Therefore, to achieve this using the Fibonacci sequence we employed in the smart contract development, we embedded an exchange function at the end of a fixed period in time after the last mining of the smart contract took place.

If all the FUTR produced by the smart contract is mined in under a 12-month period, then at the end of month 13 a temporary function is enabled in the smart contract whereby a FUTR holder is given a brief period of time to exchange the amount of FUTR held for a percentile-wise equivalent amount of ETH held in the smart contract since the point when the FUTR was mined.

This percentage-equitable exchange of FUTR with ETH held in the smart contract, when combined with the Fibonacci equation that is the basis of our mining algorithm, results in simultaneous equitable distribution of Ether to FUTR holders as well as preferential treatment of early and regular FUTR miners, since those who mined FUTR in the initial period of the smart contract and those who mined FUTR when ETH was relatively cheaper in value and who are thereby likely to be the most active miners gain more than late-stage one-off miners of FUTR.

1.3 Non-Premined Approach: Fee-Enabled Mining Solution

It has been a relatively popular occurrence recently for developers of Blockchain and smart contracts to premine a portion of the token supply as a means of rewarding themselves or the foundations they represent in financial terms for the work undertaken at point of development.

We are uncomfortable with the concept of premine for the reason that it tends to lead to a moral hazard effect, whereby the party who is the beneficiary of the premined tokens is usually excessively rewarded versus those holders who either mined the tokens or who purchase the tokens on an exchange. As a direct consequence of premine containing such a developer-biased value function, core developers who ought to be safeguarding the value of the projects they undertake to build frequently accept offers for their tokens on exchanges which are far below an acceptable market price for that of their customers, and this substantially undermines the utility token price over time.

Therefore, instead of premining the FUTR smart contract, we developed a fee schedule based on achievement of actual mining levels being achieved over time. Assuming 10 Levels of mining difficulty being achieved over 12 months, with an additional one-off charge for product development, the fee schedules we developed is as follows:

- Monthly Charge: 0.4% for Month 1-12 (there is no fee for additional months)
- Level Cost: 0.6% per Level 1-10
- Administrative Fee: 5%

These fees, which comprise a total of 15%, are removed at source upon mining of the FUTR in ETH tokens. We find this a more effective approach to rewarding the smart contract developers and the foundation than the premining alternative, principally because it incentivises us to mine and hold FUTR with the ETH received by way of the small fee payments charged instead of selling out the order books on exchange with the premined tokens.

1.4 Renewable Life of FUTR & Whitelisted Product Roll-Out

Despite its futures-contract enabled value functionality, FUTR is first and foremost a utility token which enables the miner to partake in forthcoming next-generation Futereum product releases (see Part 8: Roadmap for specific guideline dates). Therefore, once the exchange of FUTR-ETH has taken place, the smart contract enables a new cycle of product development to begin via starting anew from the 144 FUTR per ETH Level 1 mining algorithm. Several possibilities emerge here:

Possibility 1 is that a large amount of ether is retained inside the smart contract due to a lot of un-swapped FUTR. If this is the case then all remaining Ether will reside in the smart contract for the duration of the next cycle whereupon it will contribute to the increased amount of ETH swapped per FUTR. Combined with the inevitable occurrence of a decrease in circulating supply of FUTR due to FUTR getting lost in the usual ways (being sent to wrong wallet, holder of wallet losing private key etc.) we see this aspect of FUTR product design as holding a substantial long-term economic benefit for FUTR.

Possibility 2 is that many late-stage FUTR miners will mine the requisite minimum FUTR not in order to partake in the exchange of FUTR for ETH at the end of the current mining cycle but rather to take advantage of future product releases. We are especially excited about this aspect of the FUTR for it justifies the product's core utility as that of a token which enables participation in the Futereum ecosystem and doesn't just function as a Blockchain-enabled utility-focused futures contract equivalent (although this economic benefit of holding the token very much exists and will appeal to a large number of FUTR miners).

Possibility 3 is that the next-generation Futereum product releases will have to be significantly more complex in terms of their mining algorithm build-out as a direct consequence of encouraging people to mine FUTR tokens to take advantage of the new product launches. We have prepared for this event and indeed, FUTR-A, FUTR-B etc. product releases can be expected to have game-changing swaps utility functions that are not yet even available on Blockchain. At this point in time we have fully-designed the next Futereum

product release (around April – June; see Section 8: Roadmap for more) and are working on the second smart contract presently.

In summary, FUTR has economic benefits for both unique miners of the tokens (those who would mine FUTR purely to exchange the token for Ether at the end of the term) and significant further upside for those looking to rise the wave of future Futereum product releases.

2.0 Background of FUTR

2.1 Evidence of Market Preparedness for Introduction of FUTR

With the advent of futures contracts for Bitcoin being offered by CBOE and CME, utility tokens on the Blockchain that have leveraged product assimilation are an inevitable next-stage introduction. The increasing volumes of Top 10 Coin Market Cap listed Crypto are drawing attention from a wider financial audience and as these volumes continue to rise, so will the interest from financial markets investors follow suit.

2.1 Development of Futereum Utility Tokens for Ether (FUTR)

A $100 investment made at the start of the year when spread across what were in January 2017 the leading 10 cryptos by market capitalisation would have equalled nearly $25,000 by the year-end. Despite the desire for securitisation on the part of many investors in Blockchain assets as a result of such huge increases in value, such actions are more likely to undermine gains long term, and lead to funding droughts. Plus, purchasing securities that are separately traded on regulated exchanges somewhat defeats the original purpose of Blockchain investing.

Traditionally, Blockchain has been a haven for those who for one reason or the other, do not wish to participate in the regulated financial exchanges. At the same time, it is not viable to list securities on the Blockchain today since the Blockchain, being a technology, fundamentally offers utility as a prime feature whereas securities markets offer no utility at all except for the value traded in them.

2.2 Generalized Development of Derivative Utility Tokens

If you put value-enhanced (e.g. dividend-paying, revenue share, asset backed etc.) assets on the Blockchain, you run into 2 obstacles:

1) You may be creating a security under United States securities laws and this asset may require registration before being sold
2) Even if you do register the asset it won't fundamentally have any constructive impact on the protocol on which it resides, the Blockchain; possibly even, it will have a negative impact if this activity is perpetuated

2.3 The Problem with Blockchain Securitisations

Blockchain holds the potential to enhance tremendous short-term value to such an extent that many are using the payment ledger system purely for the purpose of speculating on future payment utility trends. Due to the nascent

characteristic of the technology and the potential for mainstream worldwide payment integration with adoption currently limited to a tiny fraction of the population, speculative gains on Blockchain assets are proving to be unbeatable across any other asset class.

Therefore, how do we harness future gains which may be set to continue at an even more accelerated pace, while simultaneously in the process contributing to the innovation of alternate payment utilities without detracting from them in the form of Blockchain securitisation?

2.4 Blockchain-Based Utility Token Derivatives

Futereum has created a smart contract on the Ethereum network which wherein tokens are mined according to a Fibonacci algorithm throughout 10 different stages (levels) where difficulty is measured primarily in the cost of mining the new smart contract tokens. The new token, called the Futereum (FUTR), is produced when Ethereum (ETH) tokens are sent to a smart contract address. Once all the FUTRs are created by this process, depending upon what period of time it has taken miners to produce all the available FUTR tokens, the FUTR tokens will be entered into a swap with the ETH which is stored securely in a smart contract for the duration of the FUTR mining process and up until such an exchange takes place. The process then begins anew.

Due to the fact that the process is ongoing permanently, with ETH and FUTR tokens intermittently switching back and forth between one another, and the addition of a Fibonacci equation in the mining algorithm, which miners of the round's initial FUTR tokens to obtain many more FUTRs than later ones (as with classic Proof-of-work mining algorithms), there is both traditional Blockchain payment utility in the issuance process as well as continuous functionality of the asset exchange model, bypassing the requirement for securitisation.

This bypass is achieved primarily via the implementation of core Blockchain mining utility in the form a token wherein other alternate utilities can be applied at a later date (such as community-building programs, development of alternate product offerings etc.) but also in the permanent state of the token as a Blockchain tool (i.e. it is not a contract with pre-functional expiration, and it is one which is furthermore exchanged back and forth with another non-securitised Blockchain asset).

At the same time, as a result of the addition of the Fibonacci sequence being placed in a mining algorithm which is designed to function in a way that operates similar to a forward swaps contract (futures contract) does in commodity markets, FUTRs can be employed in numerous speculative and

price hedging events as a result of their financial markets equivalent functionality. The resemblance of FUTRs to derivatives contracts is remarkable, as FUTR tokens operate like leveraged bets on the price of the asset which is used for payment and which is received back at the end of the cycle of FUTR-ETH exchanges.

This is as a result of the earlier FUTR purchasers receiving a disproportionate share of ETH at the point of exchange. For the late-comers, however, the FUTR may offer a utility token alternative that is not solely dependent on ETH price direction for miners of the current cycle's FUTR tokens will be offered an opportunity – either via employing FUTR tokens themselves in similar gains or by means of having their mining addresses whitelisted – to participate in similar new issuances of leveraged-style token utility with respect to a wider variety of Blockchain assets. New releases will be announced at the rate of approximately one per 5 completed levels of FUTR mining by The Futereum Foundation's core development team.

2.5 The Requirement for A Smart Contract Solution

For the past year at least, increasing numbers of teams pursuing initial coin offerings (ICOs) have attempted to add value into their token sales nearly always in the form of securitised traditional methods – either via offering dividends to token buyers, or by promising to undertake token buybacks using revenue shared with the funders of the ICO, or some such similar utility to the Blockchain, and rather, these offerings seem to encourage a decrease in net participation per capita of new entrants to the Blockchain in lieu of the expectation of forthcoming returns created by management teams in the same way as that which takes place on the stock market.

This is dangerous because left to its natural extent, net participation per capita falls at an alarming rate when people are offered the chance of financial returns for nothing more than their speculative monetary contributions in a given project. At this point, the potential utility mechanisms that are being created on Blockchain distributed ledger protocols will simply die away. As a result, returns in digital asset markets will drop to less dynamic levels and more importantly, as a result project funding will almost completely dry up.

FUTRs are the first in a line of a number of unique value-enhanced utility hybrid innovations that The Futereum Foundation aims to release in order to serve the increasing numbers of financial speculators who are interested in the high returns offered by Crypto, at the same time as maintaining a core utility focus that consistently adds value to the underlying technology which is enabling the foundation of all these gains – the Blockchain.

3.0 FUTR Overview

3.1 Description of FUTR

Futereum Utility Tokens are a first-of-a-kind marriage between financial engineering and Blockchain engineering, and are the most appropriate response to the recent introduction of these leveraged Blockchain-underlying derivatives contracts introduced to the securities markets for the first time in 2017.

3.2 How Futereum Tokens Work

Futereum Tokens are placed into [Block*Token] structures and purchased from a smart contract by Crypto investors. A smart contract issues new tokens on the Ethereum Blockchain and as ETH is submitted to the smart contract when it triggers the issuance of the new tokens. It is the same basic concept employed in Initial Coin Offerings (ICOs) except it is ongoing even after the ICO period and there is no fixed ICO.

In the case of an Futereum Token, Ethereum (ETH) triggers smart contract sending out the Futereum Tokens to the same address which the Ethereum came from, and the smart contract then captures and securely stores the Ethereum tokens for a specified duration. At a date in the future comprising 13-37 months (depending on how quickly the levels become fully-mined, See Sections 1.4 & 4.3) FUTR is then swapped back by the holder for a commensurate amount of Ethereum percentage-wise as that which the FUTR holder exchanges relative to the total supply of FUTR in circulation.

Month	Level	FUTR	FUTR/ETH	ETH	USD/ETH (e)	USD (Gross)	USD/FUTR
Jan	1	1,000,000	114	8,772	$750	$6,578,947	$6.58
Jan	2	990,000	89	11,124	$750	$8,342,697	$8.43
Feb	3	960,000	55	17,455	$1,000	$17,454,545	$18.18
Feb	4	910,000	34	26,765	$1,000	$26,764,706	$29.41
Mar	5	720,000	21	34,286	$1,500	$51,428,571	$71.43
Apr	6	650,000	13	50,000	$1,500	$75,000,000	$115.38
May	7	560,000	8	70,000	$2,000	$140,000,000	$250.00
June	8	450,000	5	90,000	$2,000	$180,000,000	$400.00
July	9	320,000	3	106,667	$2,500	$266,666,667	$833.33
July	10	170,000	2	85,000	$2,500	$212,500,000	$1,250.00
Dec	**Total**	**6,730,000**	**-**	**500,067**	**$18,000**	**$9,001,208,837**	**$1,337.48**

For example, if there are 6.73 million FUTR in circulation, and the holder exchanges 673,000 FUTR, then given a total of 197,908 ETH (not including the 15.3% fees as per Section 1.3) stored in the smart contract, the holder

will receive back 19,791 ETH in exchange, irrespective of what price ETH was at the point FUTR was mined or what price was paid for the FUTR on exchange.

3.3 FUTRs vs ETH

The extent of the returns embedded in FUTR phi-based algorithmic mining is easy to overlooked at first. What makes Futereum Tokens so profitable for traders is that the value mining process is set up to take place over a series of levels wherein progressively decreasing numbers of "blocks" containing progressively increasing numbers of tokens per block are mined via an equation which represents an exponential decrease in the number of Futereum Tokens issued per ETH sent to the smart contract. As there collects over time an exponentially falling number of tokens within each block, over time value mining the Futereum Tokens becomes much *harder* (more expensive) a la traditional POW or POS.

For holders of Futereum Tokens, *any acceleration* in the increase of Ethereum market price is compounded for *everyone* – even for the very last contingency of Futereum miners - so that by the time the contract swaps the Futereum Tokens with Ethereum coins, Futereum token holders themselves will simply be many more times profitable for the average investor than will buying Ethereum itself.

3.4 Real-Life Hypothetical Example of FUTR Returns

In the example detailed in Figure 2 where 1 million Level 1 FUTRs are purchased for $6.58 each at a gross cost of $6,578,947, we assume an Ethereum price appreciation in 2018 that follows Bitcoin's previous-year rise. As a result of this substantial price increase combined with the Fibonacci algorithm in the mining function of the FUTR, by January 2019 the same FUTRs purchased for just shy of $7 million 12 months earlier could be exchanged for $1.25 billion of ETH. This represents an uplift in value of nearly 19,000% vs. around 2300% for ETH over the same period.

3.5 Impact of Phi-Based Mining Algorithm with Pricing

Because the process of FUTR mining is set up in levels of difficulty wherein progressively *decreasing* numbers of "blocks" containing progressively *increasing* numbers of tokens per block are mined via an equation which represents an exponential *decrease* in the number of Futereum Tokens issued per ETH sent to the smart contract, for speculators who are confident the ETH price is headed northwards FUTRs present a potentially incredibly profitable option for early- and mid-stage players (Levels 1-8).

Even for late stage players, gains are likely to materialise without the level of risk exposure a purchase of the underlying Ethereum tokens would potentially leave a Crypto buyer. Over time an exponentially falling number of tokens is mined within each block and the Futereum Tokens becomes therefore much *harder* (more expensive) to mine as for Proof of Work coins. Further, *any acceleration* in the increase of Ethereum market price is compounded for *everyone* holding FUTRs – even for the very last contingency of FUTR miners - so that by the point when the contract swaps the FUTR with ETH, the vast majority of Futereum token holders. end up with multiple times the profits than they would have buying just Ethereum.

3.6 Ultra-Efficient Payment Utility: the FUTR dollar (F$)

Core Blockchain utility is as a payment service. This is what Blockchain was designed for by Satoshi and it is how the most effective Blockchain innovations always work – primarily as alternative payment utilities. FUTR offers a highly enhanced version of the core payment utility derived from POW mining. This is because FUTR is mined on levels wherein the cost of mining constantly fluctuates. Assume that in order to make revenue, a website charges customers for goods and services but accepts FUTR.

To make this easy for customers to understand we have created a FUTR dollar unit (F$). The F$ is not a token or a currency issued but rather *an algorithmic measurement* of fluctuating value: F$1 is equal to the amount of FUTR one ETH is currently mining at whatever level it is currently in. So for example, F$1 in level 1 is 114 FUTR; in level 2 it is 89 FUTR etc. When the mining cycle renews the algorithm takes over so the amount of F$1 decreases to 1.3 FUTR in what would become level 11 if there was one.

At least at first, what is the difference between a F$ and an ETH? The answer lies in whether the FUTR is *about to be mined* or is *already mined*. For once the FUTR has been mined then it is the F$ that becomes the relevant denominator of value for payment, not the ETH. For example, if the customer mines F$1 for 1 ETH in level 1 in order to pay for a service that costs this much, if he waits until level 2 in order to make payment then F$1 is only 89 FUTR, and hence he has made a real saving of 28% for this short wait.

By harnessing derivative utility, whereby mining becomes more or less expensive to do partly as a result of the ETH price and partly as a result of the mining level, FUTR offers merchants and service providers a way to charge less to their customers even as they potentially receive more in return. We expect that the merchant accepting FUTR should record a sharp rise in revenue at the start of every mining level as customers seek to take advantage of paying in less FUTR for the product(s) or service(s) concerned even as those same customers are getting a relative discount on the pricing.

4.0 How Futereum Smart Contract Works

4.1 ERC20 Compatibility

The Futereum smart contract is an ERC20 compatible token contract. It also dispenses tokens and safely holds an Ether balance until it is time to dispense Ether.

4.2 Mining FUTR

Accepts Ether transferred to the contract address (0xc83355eF25A104938275B46cffD94bF9917D0691) and immediately dispenses FUTR tokens according to the current tier. Note the following: This function consumes more gas than a normal transfer. You must use a wallet that supports ERC20 tokens that you control. Do NOT use an exchange wallet.

4.3 Storing Ether

The Ether remains in the Smart Contract and the fees are deducted. The remaining Ether balance cannot be removed. There are also no self-destruct methods on the contract. The Ether remains until the deadline is passed.

4.4 Checking the Deadline

Each time a token is transferred, the time Is checked against the end time. If 12 months passes and the tiers are not filled, the deadline is extended to 36 months.

4.5 Wait Period

When the deadline is reached, the contract then waits for 1 month. Neither Ether nor FUTR is dispensed during this period.

4.6 Dispensing Ether

When the deadline is reached, the contract accepts FUTR tokens transferred to its address (0xc83355eF25A104938275B46cffD94bF9917D0691), burns the tokens, and dispenses Ether. Do NOT use an exchange wallet.

5.0 Assumptions for FUTR Gas Costs

5.1 Gas Costs

We have tried to reduce gas costs were possible, however, given that this process is largely automated, the transfer and fallback (mining) functions require some additional gas in some cases.

5.2 Transfer Gas

We recommend transferring using a method that calculates gas for you. Here are some estimates (not guaranteed to be accurate):

- It usually costs around 37k gas. It cost more if the state changes.
- State change during transfers make the transfer cost around 55k - 65k gas.
- Swapping tokens for ether costs around 46k gas. (around 93k for the first account to swap)

5.3 Mining Gas

Transferring ether to the contract triggers the fallback function that mines the tokens. We recommend transferring using a method that calculates gas for you.

Here are some estimates (not guaranteed to be accurate):

- It usually costs around 90k gas. It cost more if you cross a tier.
- Maximum is around 190k gas.
- Note: Transfer from a wallet you control. DON'T send from an exchange wallet!

6.0 FUTR Technical Commands

6.1 Smart Contract Selected Function Descriptions

Unnamed (fallback) Function

The fallback function is called when you transfer Ether to the contract address (0xc83355eF25A104938275B46cffD94bF9917D0691). It requires more gas that a normal transfer because it calculates the tiers, the FUTR token amounts, and dispenses the FUTR tokens.

transfer Function

This is a ERC20 standard transfer function. It has 2 additional capabilities:

- *It checks the state of the contract based on the time and the tiers. It changes the state as necessary.*
- *It handles the sending of tokens directly to the contract address (0xc83355eF25A104938275B46cffD94bF9917D0691) when it is in the Ether dispensing state.*

tier Function

Returns the last completed tier.

currentTier Function

Returns the current tier (this is the value of tier + 1) unless tier 10 is complete. This is for convenience.

endTime Function

Returns time of the next deadline (in Epoch time). This is updated for each different state.

The length of each period (from contract creation time) is:

Dispensing Tokens	12 months
Dispensing Extended	36 months
Wait	1 month
Swap Tokens for Ether	5 days

extended Function

Returns a Boolean value indicating whether the token dispensing period has been extended because all tiers were not filled in 12 months.

wait Function

Returns a Boolean value indicating whether the contract state is in the 1 month waiting period before the swap.

swap Function
Returns a Boolean value indicating whether you can send tokens in for ether.

restart Function
Restarts contract. Token holders retain their tokens. Anyone can call this function. It can only be called after the swap period is over.

payFees Function
Pays any outstanding fees to the foundation and other addresses. Anyone can call this function.

6.2 Events

event Transfer(address indexed _from, address indexed _to, uint _value);
Standard ERC20 Transfer event. Also logged when tokens are mined.

event Approval(address indexed _owner, address indexed _spender, uint _value);
Standard ERC20 Approval event.

event Mined(address indexed _miner, uint _value);
Logged when FUTR tokens are mined.

event WaitStarted(uint256 endTime);
Wait period before swap has started. The end of the wait period is logged.

event SwapStarted(uint256 endTime);
The token swap to dispense Ether has started. The end of the swap period is logged.

event MiningStart(uint256 end_time, uint256 swap_time, uint256 swap_end_time);
Token mining has started.

event MiningExtended(uint256 end_time, uint256 swap_time, uint256 swap_end_time);
Token mining has been extended because the tiers were not filled.

7.0 FUTR, Utility & Non-Securitisation

7.1 3 Essential Characteristics of Securitised Product Design

Within securities markets, there are three forms of value one identifies on a regular basis: core value (net asset value), which is the price as asset is worth at the break-up/fire sale point, exchange value/market value, the price one may obtain for the security on an exchange or in the process of exchanging it for some form of alternate value (usually FIAT), and derivative value, the price of an asset's value relative to that alternate asset or function which it is representing.

7.2 Value & Utility Typology of Marked-Traded Instruments

All 3 values listed above might be at any one time completely different. For instance, a company's core value might be $1 billion, it's market value possibly may be even higher – possibly up to twenty times or more so - being predicated on its earnings forecast. The company's derived value would be the difference between the core value of the asset and the exchangeable value.

If for example a company was pegged to earn $50m on $1 billion of assets and it traded for a P/E of 50x earnings, its core value is $1 billion, it's exchange value is $2.5 billion and its derived value is $1.5 billion.

A similar test can be applied to payment utility, except in the case of utility assets there is no connection between the core utility and the derived utility other than that process whereby the core utility of the asset can be engineered to produce an alternate – and reflective – type of payment utility.

7.3 3 Value-Equivalent Utilities for Non-Securitised Assets

If we map the FUTR's three types of utility as we did for the value constructions of a hypothetical security, it becomes clearer where the lack of securitisation is evident in FUTR tokens:

Core Utility – For use within the ecosystem belonging to The Futereum Foundation, such as whitelisting future product launches, participating in community events etc.

Exchange Utility – The utility derived from buying and selling FUTRs against Bitcoin, Ethereum, DOGE etc. on exchanges such as Cryptopia and Binance

Derived Utility – A reverse-exchange utility in the sense in which it is applied: instead of being an exchange utility where the FUTR is sold for a sum of Ethereum (whereby it is used as a mechanism of payment for such

Ethereum), here the token is swapped for a utility it has previously derived from at some point in an earlier event (in this case the example references the mining of the FUTR itself which is swapped back for the ETH that mined it).

7.4 Applying the Howey Test to Utility Derivatives

It is clear from the utility mapping exercise performed above that core utility and exchange utility function very similarly to their value counterparts. However, in the case of derived utility, there is no fundamental linkage between any sort of valuation process and the functionality of the token whatsoever – rather, derived utility is merely a more advanced form of exchange utility, whereby an exchange has taken place at some point in the past and is then re-enacted. For the derived utility to have security status, it must meet one of the following conditions of the HOWEY test:

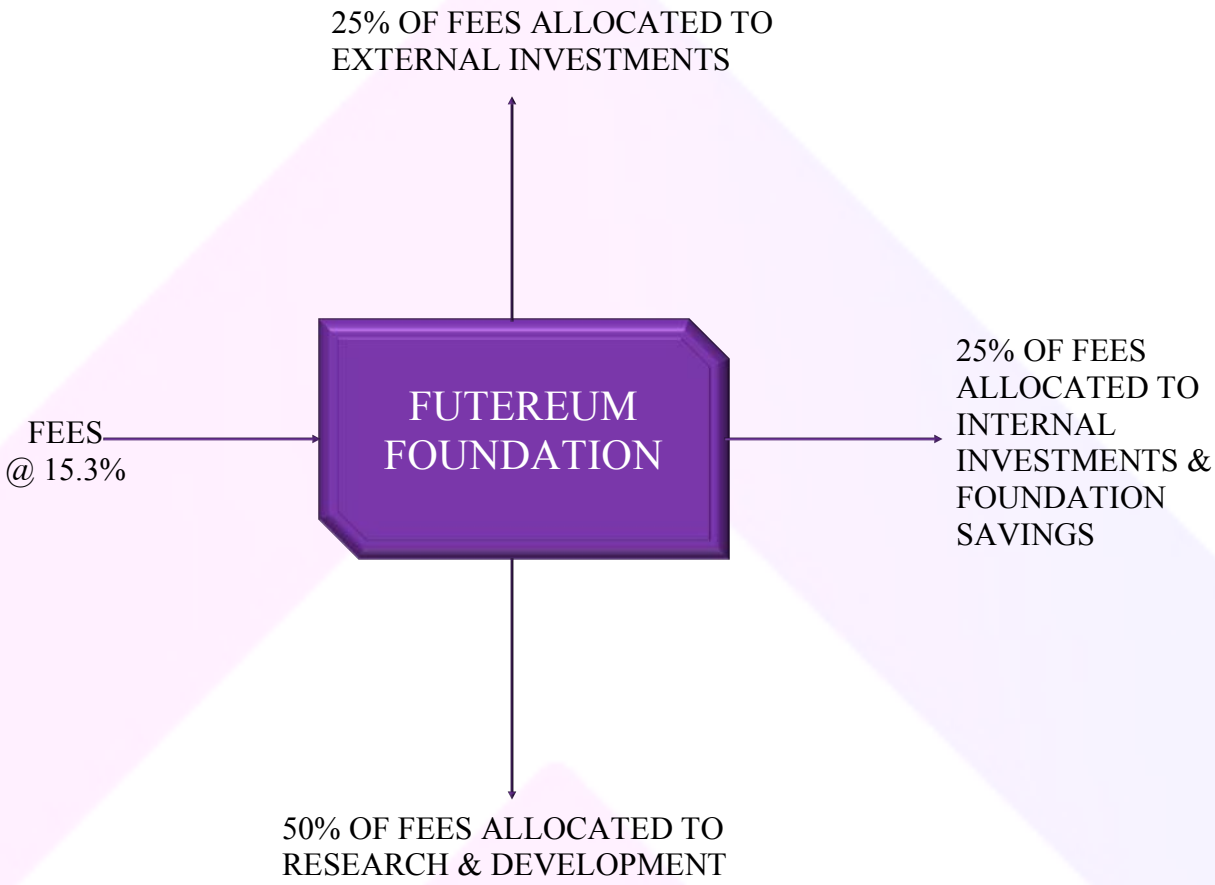
- It must be an investment of money
- There must be an expectation of profits from the investment
- The investment of money is in a common enterprise
- Any profit comes from the efforts of a promoter or third party

First, there is no investment of money at the outset, but rather a mining of FUTR with the use of ETH. Second, although there may be an expectation of profit on the part of the FUTR miner, that being at the point of the re-exchange of the FUTR with the ETH used originally to mine the FUTR or via sale of the FUTR on a major crypto exchange where it is listed, it is not the foremost reason for the token purchase.

FUTR is purchased to take advantage of future products offered by The Futereum Foundation for which ownership of FUTR – and especially, early ownership of FUTR – is given considerable preference. If FUTR by means of being re-exchanged with the ETH in the smart contract yields a capital gain at the end of the term of the current 10-level mining round then this is fortuitous. It is worth noting that there are not even any profits yielded as a result of any of the abovementioned transactions either, since there was no initial “investment of money” in the first place. As for the third point, this is clearly a non-sequitur here.

Insofar as the fourth point is concerned, The Futereum Foundation does not receive any portion of any profit. It receives a flat fee paid in ETH at the point at which the FUTR is mined. The foundation receives compensation for its services providing the development and product advancement of Futereum tokens long before there is any evidence of the FUTR miners being able to capitalise materially on their FUTRs. (They would be vale to of course either as a result of exercising the exchange utility or the derivative utility inherent in the token.)

8.0 Foundation Revenue Treatment

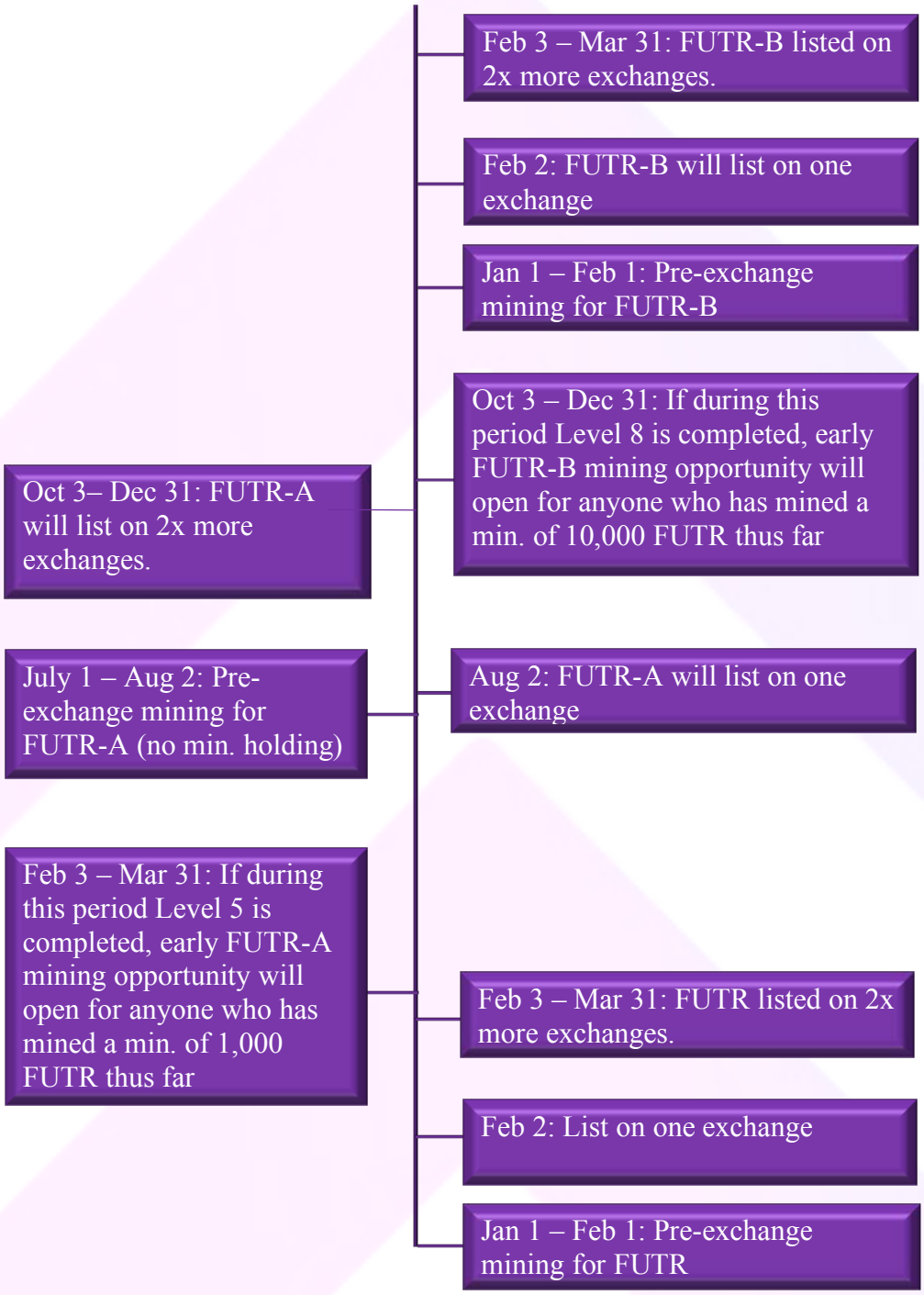


For every ETH received, the Foundation holds a multi-signature for the purpose of effecting any urgently in demand any technical issues. At the point when FUTR is mined, a one-off fee of 15.3% is subtracted from the smart contract pool of ETH employed in the mining process.

Half of this pool of revenue will be used towards paying for research and development of the Foundation's project(s); a quarter of the pool will be used by the Foundation to invest in external businesses / Blockchain / projects, especially into areas where there may be future synergy with respect to the growth of the Foundation's product offerings and / or involvement in developing Blockchain applications in general; an additional quarter of all revenue remains left over in the form of savings.

Out of this revenue the Foundation may at times employ the ETH received in the process of mining its own FUTR-based tokens as well as in providing investment capital for ; this type of investment capital for venture capital funds and projects with similar interests.

9.0 Roadmap



9.1 Notes for Roadmap

1. FUTR-A and FUTR-B are generic names for a next-generation Futereum product launch and not the name of the actual tokens

2. This is an approximate one-year plan. After the period following two subsequent successful product launches, depending on market

conditions at the time, we may launch a FUTR-C product but the product launch dates have not yet been planned. We will announce them during the course of 2018

3. Futereum does not guarantee that these deadlines will be accurately maintained. The annual roadmap illustrated here serves as a guideline only of intended product launch only and is subject to the influence and timing of external events (e.g. severe changes in market direction / conditions)

4. After FUTR-ETH swap takes place the process begins anew

9.2 Five Possible FUTR Scenarios For ETH

The following are 5 highly plausible scenarios for ETH in coming 12 months. We forecast a pretty substantial amount of value churn and generalised boosting of highly-integrated software platforms such as ETH, EOS, ICON etc. We also forecast a high volume in FUTR towards the more difficult end of the mining period for the reasons described herein.

Scenario 1: ETH begins a late-year rise like Bitcoin had in 2017 and FUTR miners in the late levels begin to aggressively mine FUTR in order to get whitelisted for other Futereum product releases and in order to activate the swap on month 13. If Ethereum is rising as fro Bitcoin in late 2017 in the Q418 period and miners snap up the last lots of FUTR in order to take advantage of soaring ETH – and by extension FUTR – prices, then the resultant increase in value for Level 1 stage miners comes to around 19,000% in a 12-month period by the end of January 2018.

Scenario 2: Level 8-10 FUTR miners do not swap but instead leave a significant portion of the Ether inside the smart contract to roll over for the subsequent year. If this is the case then there will be an additional 781,733 ETH left in the smart contract the following year for swapping. At Bitcoin's current price, that is approximately $2,006.83 per FUTR. This scenario would justify a $14 billion valuation for FUTR in issue, making it the world's 10th largest Crypto by market cap in current circumstances. The return for Level 1 miners in this scenario rises to 33,233%.

Scenario 3: All the FUTR is mined prior to July 2017 and the Ether price touches $18,000 per ETH in 2018. In this scenario, it is likely that if continued price appreciation were dominant that a large portion of FUTR holders would exchange at the end of the month 13. However, there is a good chance that either: no exchange would take place for a large portion of FUTR as the FUTR holders aimed to mine the early levels of the subsequent mining cycle or that there would be a massive price drop around the time of

the exchange. If the latter were the case then likely the FUTR price would drop from $1500 to around $400 in the mid-term, presenting an attractive entry point for buyers.

Scenario 4: A hedge fund with a view that Ether is likely to touch $18,000 later in the year mines all levels 8-10 and then subsequently mines most of levels 1-5 of the following mining cycle. If the hedge fund in question was to make such purchases they would come to between $300m - $1 billion. While these sound like large numbers, by speculating on Ether itself the fund would stand to gain about 5 -6 times the amount of FIAT in the event that the trade was successful. The FUTR mining option described however presents the fund with a much more attractive alternative; a smart contract which has a liquid market on a major Crypto exchange and which exchanges to Ether at the point of delivery (most likely at the end of the second cycle after 24 months) with a return of $98 billion. There is simply no other way an institutional investor could expect such a large return on such a liquid basis Crypto or in any other asset class without assuming extra debt and costs.

Scenario 5: ETH rises in value to $2000 before plummeting to around $400 at Level 7. By Level 10 at the year-end ETH price has regained to $4000. This scenario would mean that 98.5% of miners from levels 1 – 10 would be in profit which would not necessarily be the same case were they holding underlying ETH that they sold out in the interim. Miners who stood to make the most money would be those early-stage miners who continued to mine FUTR while ETH fell back. For instance, a miner who mined FUTR every other Level from the first Level until the penultimate one would end up in such a case with a roughly 2000% return on an underlying asset that had increased just 500% in value after falling to 50% of its present-day value for half the year. The scenario illustrates well how FUTR can not only be employed in generating alpha coefficient returns but furthermore, how when it is used in strategic repurchase plans it actually protects Crypto buyers from market downturns by magnifying potential upside

10.0 Blockchain Utility Derivatives

The presence of simultaneous leveraged value characteristic and complete lack of securitisation of The Futereum Token is what we believe to be the FUTRs most innovative quality.

We foresee the foundation building substantially in the future on top of multiple Crypto products and applications utilising such a model as it functions just like any exchange-traded POW currency, with a fixed cost base that progressively rises, while simultaneously enhancing by many multiples over the performance of the potential returns of the holder versus a prospective holding in the referenced Crypto employed in mining it and thereby setting such cost.

All the while, value is held in a non-securitised form in a secure smart contract. We believe it is this sort of function for which a smart contract was designed; that is to say, for the enhancement of value production via a new utility discovery and not purely for the purpose of safety in fundraising as it is more commonly used in ICOs today.