



BEEF Token Economics and Liquidity: Guidelines to Inform the BeefLedger Community

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Responsible BEEF Token Ownership

The BEEF Token: BEEF Token is an ERC-20 compliant crypto-token to be tracked on the Ethereum blockchain, with the ability to be used to transact services within the BeefLedger blockchain ecosystem. The Token is a non-mineable cryptocurrency.

The Token Ecosystem: The Token is part of an integrated tokenised ecosystem supporting and enabling streamlined supply chain finance and decentralised supply chain finance opportunities that support reduced costs and greater community value. This capability is supported by a robust asset tracking infrastructure that is the BeefLedger Proof of Authority Network, deployed on Ethereum. The integrated tokenised ecosystem comprises the following key elements:

- *The BEEF Token*, which is the ecosystem general means of payment and value transfer token. As a means of payment, the BEEF Token can be used to transact for real products (eg., beef and wine); transact in collateralised supply chain project ERC20 digital assets issued under license, on the BeefLedger Exchange; buy real products on the BeefLedger Marketplace (which are listed in the form of ERC Digital Asset Identification Certificates ERC721 tokens); Participate in BeefLedger Proof of Authority Asset Tracker Network services (eg., Community Attestation data state update validation processes); and participate in the BeefLedger Uniswap Liquidity Partners Program.
- *Digital Asset Identification Certificates (DAI-Certs)*, which are non-fungible ERC721 tokens minted when real supply chain assets are registered to the POA Asset Tracker. These ERC721 tokens provide the mechanism by which asset ownership and custodial responsibility can be tracked and authenticated.
- *Digi Units*, which are limited issue Fungible ERC20 tokens. These Digi Units are collateralised digital assets, which are Units in registered investment schemes issued under license in Australia. Digi Units are available on the BeefLedger Exchange.



Mission: BeefLedger is driven by a belief that consumers and all supply chain participants can benefit from greater transparency and streamlined transactions in the beef supply chain. Food safety and fraud concerns are massive issues in markets all over the world. BeefLedger's mission is to develop and commercialise an integrated blockchain-enabled beef provenance and smart contracting payments regime that streamlines payments and strengthen consumer confidence in product credentialing.

Values: Our values are to promote efficiency, fairness, sustainability and the pursuit of excellence across the entire beef supply chain. We believe that we can promote this by enabling the valorisation of data. The BEEF Token is the ecosystem's medium of value transfer, enabling data to be valorised and supply chain value to be fairly distributed.

Prohibitions: BEEF Tokens are issued on the basis that holders do not use BEEF Tokens for any speculative, illegal or unethical purpose including but not limited to money laundering and funding of terrorism.

Speculation: BEEF Token is an exchangeable digital crypto-token. This is to ensure market mechanisms can be mobilised to provide sufficient and timely liquidity, at an acceptable relative value, to the ecosystem to enable the production, distribution and consumption of premium beef. To this end, BEEF Tokens are issued on the basis that holders will not misuse them by participating in speculative investment and market manipulation activities. Market manipulation activities include, but are not limited to, the following:

- Churning, which is an attempt by a holder or group of holders acting in concert to drive up token value and attract other investors by buying and selling orders at the same price;
- Ramping, which is the creation of activities or information intended to raise the price of a stock;
- Token Bashing, which involves the promulgation of false and / or misleading information about the BEEF Token and the BeefLedger ecosystem and / or companies involved in the ecosystem in an attempt to drive down the relative value of BEEF Tokens;
- Wash trading, which is generating activity to push up the token value by selling and re-purchasing the same token;



- Bear raiding, which is an attempt by a token holder or group of holders acting in concert to short sell the BEEF Token and drive its relative value down, allowing it to be bought back at a lower price and thus make a profit on the difference;
- Cornering, which is purchasing a sufficient volume of BEEF Token in order to gain control and establish the price for it; and
- Insider trading, which in this case refers to ecosystem insiders with confidential information about supply chain activities to use that information to their benefit.

Lender of Last Resort: BeefLedger Limited has retained 30% of all potential circulating tokens to fulfill a Lender of Last Resort Function. A Lender of Last Resort Function may be called into play in the event that ceteris paribus, there is insufficient liquidity in the market at a reasonable price to enable the smooth movement of beef throughout the supply chain. In fulfilling a Lender of Last Resort Function, the additional tokens injected will not be part of the permanent circulation volume of tokens, but would be provided at a cost (effectively an interest) to the borrower(s).

Ecosystem Responsibility: BeefLedger encourages all ecosystem participants to behave as Responsible Token Owners and adhere to the guidelines above. We encourage all ecosystem participants to maintain vigilance against irresponsible behaviours and notify the community in the event that there are reasonable grounds to believe that a Token Holder or group of Token Holders acting in concert are engaged in market manipulation or speculative activity. Suspicious or potentially illegal activities should be reported to the relevant authorities.

Non-Adherence to Guidelines: demonstrable failure of token holders to uphold the values of the BeefLedger ecosystem and adhere to the guidelines on responsible BEEF Token ownership may result in sanctions. Sanctions may, but not necessarily, include some or all of the following: public naming; suspension of account processing; and penalties (to be determined) including payment of fines. Other sanctions may be considered by BeefLedger and the BeefLedger ecosystem.

Token Minting and Circulation

There are a total potential supply of 888,888,888 BEEF Tokens. The token distribution is as follows:

- 15% private pre-sale (concluded 30 June 2018) to project supporters. These tokens are escrowed, with no locked in release date;



- 15% allocated as Community Partner Tokens. This takes the form of general release (subject only to the Guidelines above) and in so circumstances in the form of Restricted Escrow Partner Tokens (see below);
- 40% held by BeefLedger directors, founders and associates; and
- 30% retained by BeefLedger to fulfill a *Lender of Last Resort* function within the ecosystem.

Partner Tokens and Restricted Escrow Tokens

BeefLedger is committed to designing and building a sustainable token economic ecosystem that enables data valorisation and delivers on its broader objectives of supply chain sustainability, vitality, fairness and the pursuit of excellence. Partner tokens have been provided for, so that ecosystem development partners can contribute to the ongoing vitality of the supply chain ecosystem in a responsible manner.

We are mindful to militate against token speculation that can harm the ecosystem, especially during its formative period. As such, the issue of tokens to development partners will take place under strict conditions, governed by either the Partner Token Agreement or a Restricted Escrow Token Agreement. On the first day of token minting, BeefLedger expects to issue no more than ~2% of partner tokens to partners subject to execution of Partner Token Agreements. Tokens issued under a Partner Token Agreement are issued on an intervals basis, typically staggered over at least a 12-month period. The Restricted Escrow Token Agreement will require an “escrow period” upon receipt of tokens. During the escrow period, inter alia, the holder will not do any of the following: 1. Dispose of, or agree or offer to dispose of, the restricted token. 2. Create, or agree or offer to create, any interest in the restricted token. 3. Do, or omit to do, any act if the act or omission would have the effect of transferring effective ownership or control of the restricted token. All partner token holders are required to abide by the guidelines on responsible BEEF Token ownership.

Future Token Release

Additional tokens (including partner tokens) will be released over the next 3-4 years subject to ecosystem requirements. These requirements will give consideration to ecosystem token relative values vis-à-vis the fiat currency value of beef, and demands for tokens arising from increased ecosystem activity (see uses summarised above). This activity will be driven by increase beef volumes transacted overall, increased data volume demands (as analytics layers are delivered, for



example) and new ecosystem entrants. Additionally, as BeefLedger designs and tests a range of cryptocurrency incentive mechanisms (through mechanics design collaborations, ultimately operationalised through smart contracts that ecosystem participants can select from), additional liquidity may be needed to - in the first instance - provide sufficient new liquidity to action and validate “test” implementations. The extent of additional liquidity will depend on the incentive range required to be implemented to sufficiently drive behaviours leading to desired future system states.

Our approaches to these issues will be developed in the context of BeefLedger’s involvement in research and development projects such as those being undertaken under the auspices of the Food Agility CRC and Future Food System CRC in collaboration with researchers at Queensland University of Technology and elsewhere, under advice from leading researchers in the field.

Furthermore, we are mindful that at times, exogenous factors may impact the relative value of BEEF tokens. For example, assuming that BEEF tokens are utilised to validate the provenance of Australian beef only, biosecurity incidents in other exporting countries e.g., North or South America, may give rise to rapid demand growth for credentialed Australian beef compared to *ceteris paribus* conditions. In these episodes, it is reasonable to expect demand for BEEF tokens to also rise, and with it, a non-normal increase in token exchange value. In these circumstances, BeefLedger is of the general view to allow market forces to determine token relative value and trajectory. Only under conditions where a rapid escalation in value may result in hoarding behaviour, so much that so the natural flow of beef is adversely impacted, will BeefLedger consider acting as “lender of last resort”.

Lender of Last Resort

As beef is a perishable item, a (temporary) lack of means of payment liquidity impacting the flow of real product is an undesirable outcome. We propose a market-based mechanism to determine whether and when to provide the liquidity demanded to de-congest the legitimate flow of beef. Here’s an example of a possible mechanism: When an ecosystem participant (A) seeks to purchase sufficient tokens to facilitate a transaction but the market place is experiencing constrained sell side propensity (hoarding), A may notify the market that it is triggering a lender of last resort call. The call will need to be supported by a counterparty B, via a multi-sig smart contract to ensure the need is for legitimate transaction purposes. When this call is triggered, the market has 72 hours to provide the tokens demanded at the prevailing market price. Should, after 72 hours, A has not been



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able to source sufficient tokens, BeefLedger will issue a bridging loan at a price of the 72 hour average price + an interest of X%. X% in effect represents the opportunity cost for token holders choosing not to sell tokens to A. We are undertaking ongoing research into this area. For the time being, given the volume of tokens to be in circulation, we do not anticipate any immediate need for this function to be invoked.

Use of Bonds as Sanctions

Rather than, or in addition to, using reward incentives to shape behavioural probabilities, we may introduce bond deposit mechanisms as smart contract pre-conditions, so that demonstrable behavioural non-conformance results in the forfeiture of the bond. We would encourage ecosystem participants to suggest or develop solutions that can be added to the suite of smart contracts that can be operationalised by all parties active in the ecosystem.

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