Public Consultation: Verra's Approach to Third-Party Crypto Instruments and Tokens

Response document by Toucan Protocol.

Toucan
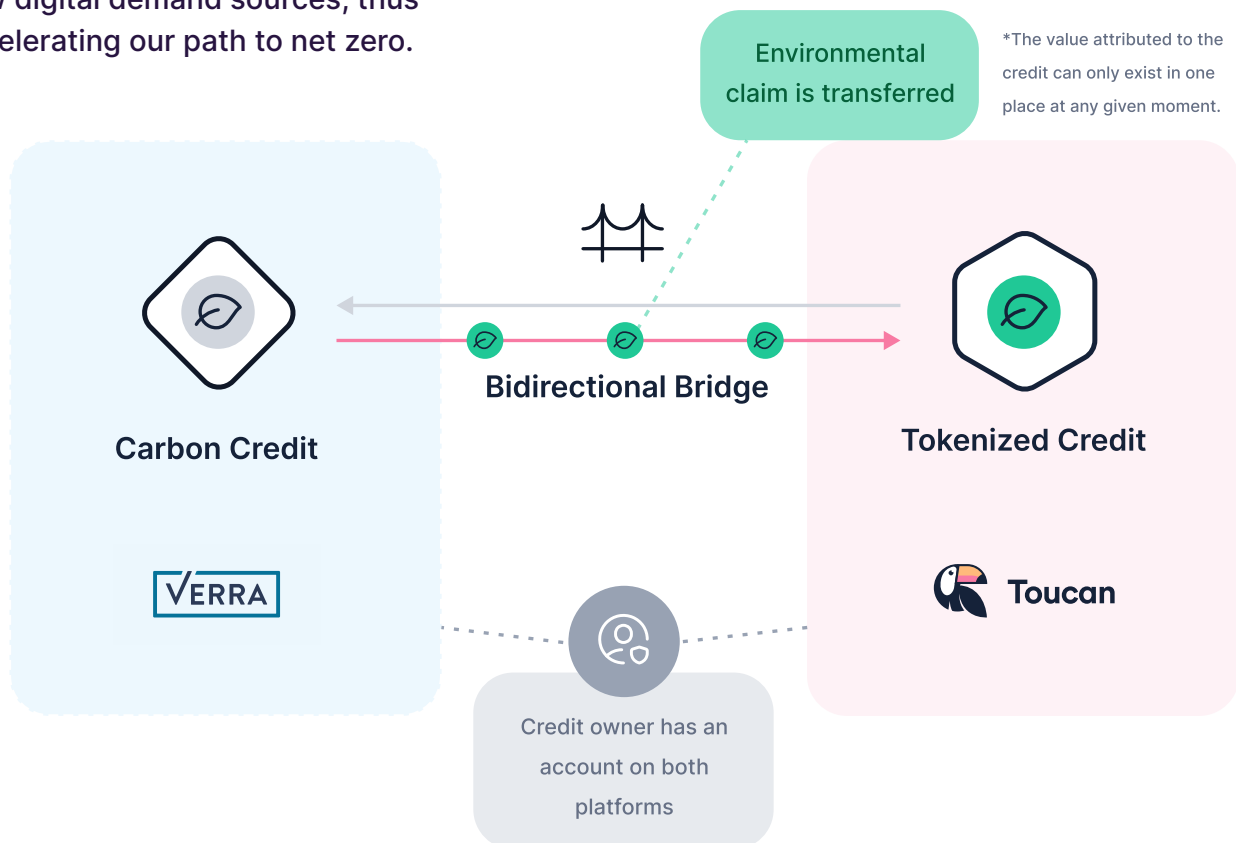
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Executive Summary

Toucan appreciates the opportunity of providing input to Verra's Consultation, as we firmly believe that an authorized tokenization solution will not only be well-received by the market but play a key role in digitizing the Voluntary Carbon Market (VCM). Through an authorized bi-directional bridge with the necessary safeguards for market participants, the on-chain carbon market can enter the next phase towards broader market adoption from both legacy market participants as well as new digital demand sources, thus accelerating our path to net zero.

Toucan has been an active participant in the **IETA Digital Climate Markets Working Group** and supports the establishment of the Code of Best Practices framework as applied to the **tokenization of carbon credits**. As such, Toucan's infrastructure can be used for both **native and reference tokenization** of carbon credits as defined in IETA's Code of Best Practices.

Environmental claim is transferred

*The value attributed to the credit can only exist in one place at any given moment.

Carbon Credit

VERRA

Bidirectional Bridge

Tokenized Credit

Toucan

Credit owner has an account on both platforms

Toucan strongly believes that the **direct tokenization pathway** — wherein the environmental attributes attach to the token — is the best approach because it **addresses safeguarding concerns** by default while being in line with important **web 3.0 principles** that are key

for greater adoption.

Toucan recognizes that a direct approach requires some adjustments to the registry, an API integration as well as some changes to Verra's terms of use.

We believe that these changes could be established in a **reasonable time-frame**. However, in the spirit of iteration, if these changes are not realizable within Q1 2023, we would partner with a trusted custodian to implement a secured/custodian approach until the necessary changes for a direct pathway can be realized.

Under the assumption that this consultation should be a platform to advocate for our **core beliefs**, the following sections focus on a **'Direct Tokenization' pathway**.

Key points

Regulatory:

Toucan believes that the requirements applied to a tokenization platform, should be in line with current market participants and practices in the VCM:

- **The VCM is an unregulated market where carbon credits are not classified as securities.** This holds true for the tokenized market where carbon credits are considered commodities and classified as utility tokens. In fact, Toucan's tokens, whether the reference token **TCO2 or pool token NCT** are all considered **utility tokens** under the Swiss regulatory framework and thus **not subject to KYC**.
- While there are ongoing regulatory discussions about the carbon credit markets in many jurisdictions, the outcomes are for now uncertain. However, it is likely that the on-chain carbon market can evolve with any new compliance requirements the VCM may become subject to, as the **tokenization in itself should not change a classification**.

Status and Accounting of Credits and Tokens in Registry:

The **additional state of 'tokenized'** in the Verra registry is introduced with the credits in that state moving into a dedicated account. This account of tokenized credits mainly represents a book-keeping function, while the **token represents the actual credit** with its environmental attributes. With the process of redemption (de-tokenization) the original credits are re-activated out of this dedicated account and transferred to the owner's registry account.

Onboarding of Tokenization Platforms:

Toucan recommends that Verra undertake a **standard KYC on any tokenization platform** in line with other service level agreements, prior to entering into any collaboration agreement for tokenization of VCUs from its registry. As part of this process, Verra should receive not only the **standard corporate documentation** but also any **architecture description, smart contract audit reports, and an implementation proposal** of identification for authorized users of the tokenization infrastructure.

Identification of Users:

Regardless of the fact that the Toucan tokens are not subject to any KYC requirements under the Swiss regulatory framework as applied to digital assets, **Toucan is prepared to implement identification (including AML) requirements** for entities looking to interact with the Toucan Carbon Bridge, i.e. for users looking to tokenize (on-ramp) or de-tokenize (off-ramp) credits. This could be realized by introducing a **new Verra registry account type** that allows users to tokenize once they have **linked their identity** to a wallet address. Depending on the options within Verra's system, it can be feasible to use a 3rd party service that hosts the identification data related to tokenization, while both Verra and the tokenization platform **embed a verification of identification signal** (e.g. web3 account whitelist or NFT token) into their system.

Double Issuance:
Any tokenization platform must address "double issuance" and Toucan's existing infrastructure platform already provides an **auditable, bi-directional link** between the standard's registry and the platform. With the improved clarity on the status of the original credits and tokens and the retirement functionality firmly linked to the 1:1 reference token, this risk is mitigated.

Pooling Policy Implementation:
Toucan recognizes that different standards have unique pooling policies. Ensuring an implementation in line with specified policies will build trust with the standards, which will be prioritized even if on the other hand this can reduce the potential utility with respect to deep liquidity. Toucan can **"hard code" certain restrictions** into the pooled smart contracts to address specific pooling concerns.

Fractionalization of Tokens:
Toucan Protocol fully agrees with Verra on its statement about the **significant potential** that sub-tonne fractions of retirements can have on unlocking material new sources of demand. Toucan Protocol would be very happy to engage with Verra on **designing and implementing** a solution fit to Verra's existing infrastructure in order to enable this use case of micro-retirements that web3 is already successfully demonstrating.

Anti-Fraud:
By **onboarding and vetting** its tokenization counterparties, Verra will mitigate the risk of fraud or fraudulent behavior by such counterparties.

Areas of greatest potential:

A Improved market experience:
Via the tokenization of VCUs, Toucan's infrastructure will **improve the supply and demand experience** for market participants. Suppliers can directly transact and sell credits without additional layers of intermediaries while buyers also encounter less friction and risk. With **more transaction transparency** will come better price discovery, thereby supporting the growth of the VCM.

B Market expansion:
Tokenized carbon is programmable and can be integrated into IT and web3 projects, creating **higher utility and new use cases** for carbon. 188 projects are building on Toucan's infrastructure, opening up the possibilities for carbon as a **green building block** and paving the way for microtransactions.

C Deeper liquidity:
In an open and composable ecosystem, tokenized carbon credits can be **pooled and used as collateral** in a wide range of decentralized finance (DeFi) applications. Users can lend and borrow, stake, or they can turn to a liquidity provider (LP) for specific pools in return for yields. These new sources of demand can help carbon markets **scale exponentially**.

Glossary

API

API stands for Application Programming Interface. APIs are mechanisms that enable two software components to communicate with each other using a set of definitions and protocols. For example, the weather bureau's software system contains daily weather data. The weather app on your phone "talks" to this system via APIs and shows you daily weather updates on your phone.

Bi-directional Bridge

Bi-directional refers to the mechanism allowing both tokenization and de-tokenization or redemption.

Bridge

Bridge refers to the mechanism of turning a credit in the standard registry into a tokenized credit hosted by Toucan's registry. A carbon credit that has been 'bridged' now exists as a token on the blockchain.

Burning

Token burning means removing tokens from circulation which is a web3 term for making permanently and irreversibly inaccessible. This is technically how on-chain credits are retired.

Direct tokens

A direct token is a carbon credit which has previously existed in an off-chain registry but has changed its state to 'tokenized' at the point of being bridged on-chain. The environmental claim has thus moved from the credit to the token.

A direct token enables an environmental claim to be made when the token is burnt on the blockchain and not when the state of the credit is changed from Tokenized to Retired within the registry of the Standard that originally issued the credit. (IETA Code of Best Practice).

Immobilized Account

Immobilized account refers to a special account within the Verra registry that keeps track of all carbon credits that have been immobilized as part of a secured (custodian) pathway. Credits within the immobilized accounts don't have an owner since the ownership is represented by the holder of the respective carbon credit tokens.

Native tokens

A native token is a carbon credit token that is issued by a standard body.

NCT

Nature Carbon Tonne, a carbon token that has been created and issued via the pooling infrastructure of Toucan Protocol.

NFT

A non-fungible token (NFT) is a unique digital identifier that cannot be copied, substituted, or subdivided, that is recorded in a blockchain, and that is used to certify authenticity and ownership. "Non-fungible" more or less means that it's unique and can't be replaced with something else. For example, a dollar is fungible — trade one for another dollar, and you'll have exactly the same thing.

Pool tokens

Carbon pools are a way of grouping together tokens linked to credits with similar attributes. This creates standardized types of tokens (like NCT) that can be easily priced and traded on cryptocurrency exchanges.

Redemption/ De-tokenization

Direct Tokens can be exchanged for the original carbon credit in the carbon registry. This exchange can be achieved through a Two-Way Carbon Bridge that allows users to reverse the tokenization process for any given direct token. That way, on-chain carbon markets are fully interoperable with the existing carbon credit ecosystem, and a stable market can be ensured where prices are tied to the off-chain market.

Reference tokens

According to the IETA Code of Best Practice, reference tokens are carbon credit tokens created by authorized market participants. For instance, TCO2s issued by Toucan can be considered reference tokens.

Disclaimer: In Toucan's current communication, reference tokens are used to describe pool tokens based on the the language developed by the TSVCM of reference contracts.

Smart contract

A smart contract is a self-executing contract with the terms of the agreement between buyer and seller being directly written into lines of code. The code and the agreements contained therein exist across a distributed, decentralized blockchain network. The code controls the execution, and transactions are trackable and irreversible.

TCO2

TCO2 tokens are carbon credits that have been tokenized via the Toucan Carbon Bridge. Each TCO2 token is 1:1 backed by a carbon credit in a respected registry. Each TCO2 token carries all the attributes and metadata of the original carbon credit, making it specific to a given project and vintage.

Tokenization

A process that converts original carbon credits into carbon tokens — a digital replica of a carbon credit stored on a blockchain. The IETA code of best practices specifies different paths for doing so, Native Tokenization (by the standards) vs. Reference Tokenization (by an approved 3rd party).

Tokenized Account (Imobilization account)

Tokenized account refers to a special account within the Verra registry that keeps track of all carbon credits that have been tokenized via a direct approach. Credits within the tokenized accounts don't have an owner since the ownership is represented by the holder of the respective carbon credit tokens. Also, the environmental claims underpinning the credits within the tokenized account are now represented by the tokens rather than the credits in the tokenized accounts.

Transaction hashes

A transaction hash is a unique string of characters that is given to every transaction that is verified and added to the blockchain.

Toucan in context

Toucan Protocol Association ('Toucan') appreciates the opportunity of participating in Verra's Public Consultation on Third-Party Crypto Instruments and Tokens (the 'Consultation').
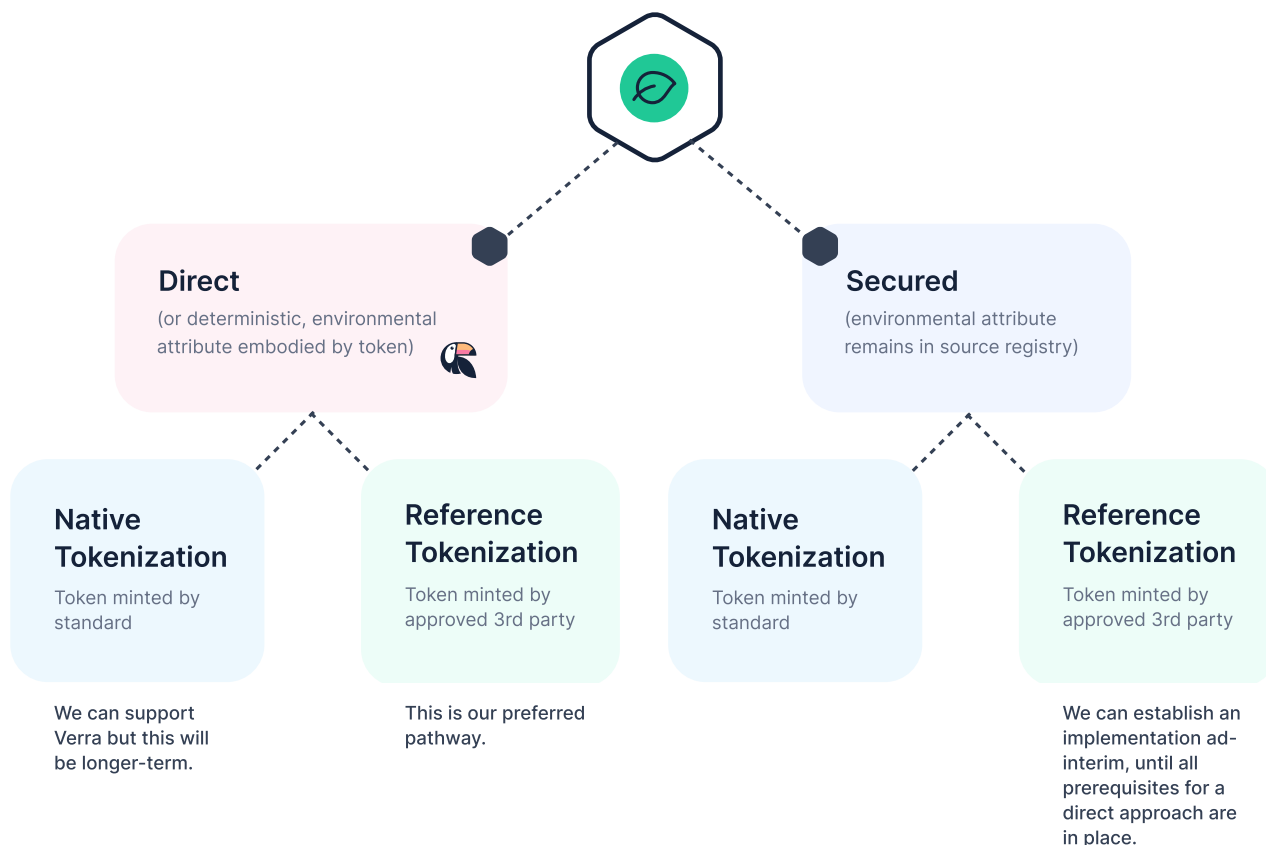
In this section we briefly outline relevant background on Toucan Protocol and our work with other institutions in order to aid understanding of the context in which these responses are given.

Toucan operates a blockchain-based infrastructure platform to support a scalable and thriving carbon market. The **Carbon Bridge** module facilitates the conversion of voluntary carbon credits issued by standards programs such as Verra into **tokenized carbon credits**. It can be used for both native as well as reference tokenization of credits as defined by IETA's Code of Best Practice for Digital Climate Markets[1].

Our preferred tokenization pathway is the **"direct" (or deterministic) approach** whereby the environmental claim underpinning a VCU (Verified Carbon Unit) is transferred from the carbon credit to the token upon tokenization. Being intangible assets based on verified data make carbon credits a good fit for status recording on a public blockchain, which is why we favor the direct tokenization approach. We assume that when a Direct Token pathway is enabled, the **tokenized state** will be introduced in Verra's registry.

Tokenization Approach

Direct
(or deterministic, environmental attribute embodied by token)

Secured
(environmental attribute remains in source registry)

Native Tokenization
Token minted by standard

We can support Verra but this will be longer-term.

Reference Tokenization
Token minted by approved 3rd party

This is our preferred pathway.

Native Tokenization
Token minted by standard

Reference Tokenization
Token minted by approved 3rd party

We can establish an implementation ad-interim, until all prerequisites for a direct approach are in place.

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[1] Native: Toucan's infrastructure can be leveraged by standards to issue credits as tokens on a 1:1 basis;
Reference: Toucan would create the carbon credit tokens on a 1:1 basis as an authorized market participant.

Tokenized carbon credits (TCO2s) on Toucan's platform carry all the relevant project and vintage-specific attributes and can be transferred between accounts as well as retired to consume the underlying environmental claim.

The Pool module can be used to create baskets of credits that share a set of **predefined criteria**. The Nature Carbon Pool, for instance, only allows for credits generated through nature-based methodologies. Matching credits can be exchanged for pool tokens (like NCT—Nature Carbon Tonne) and pool tokens can be swapped back into project and vintage-specific TCO2s at any point in time.

Since its launch in October 2021, we believe Toucan has demonstrated the potential that a tokenization infrastructure platform can bring to the Voluntary Carbon Market:

Participation.

Toucan has established **an easier route** for individuals and small organizations to purchase and sell voluntary carbon credits either to offset their emissions (companies) or monetize their originated credits (project originators/developers).

Liquidity.

Toucan's infrastructure platform **increases the overall volume** of value as well as the volume of transactions in the Voluntary Carbon Market. This enables aggregation on both the supply and demand side. This provides the foundation for greater financing power as retirements occur and better forward financing solutions based on robust market price signals are established.

Matching and Price Transparency.

Toucan's pools enable **curation and standardization**/commoditization of credits, thus enabling deeper liquidity and better price discovery. The pools also allow project developers to convert their project-specific credits into a more liquid asset.

As with many market innovations, the initial experience with Toucan's infrastructure platform, similar to other tokenization platforms, has highlighted areas where **modifications and improvements are warranted**.

Throughout the history of the Voluntary Carbon Market, stakeholders have identified program design flaws and taken appropriate steps to correct them through an iterative, participatory process. For these reasons, **Toucan welcomes both this Consultation and any related consultations** taking place under the auspices of other institutions, such as the International Emissions Trading Association's initiative to develop a Code of Best Practice for Digital Climate Markets ("IETA Code of Best Practice").[2]

Toucan is actively participating in these consultations as we strongly believe that the **substantial benefits of tokenization platforms** for the Voluntary Carbon Market will be better realized if Verra and other standards establish robust requirements for such platforms.

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[2] This submission uses certain terms–such as "Immobilization Account" and "Tokenized Account"–that are defined in the IETA Code of Best Practice as well as the attached glossary.

Q1.

Regarding the creation, transfer, and use of VCU-backed crypto instruments and tokens, what safeguards should be implemented by Verra to ensure environmental integrity, particularly to prevent double-issuance and double-use?

Toucan urges Verra to consider the following types of safeguards:

A - Safeguards to **preserve environmental attributes**;

B - Safeguards to prevent **double-issuance**;

C - Safeguards to prevent **double-use**;

D - Safeguards around the **transfer** of VCU-based tokens on the tokenization platform;

E - Safeguards around the transfer of VCU-based tokens **back into the Verra Registry** ("Redemption"); and

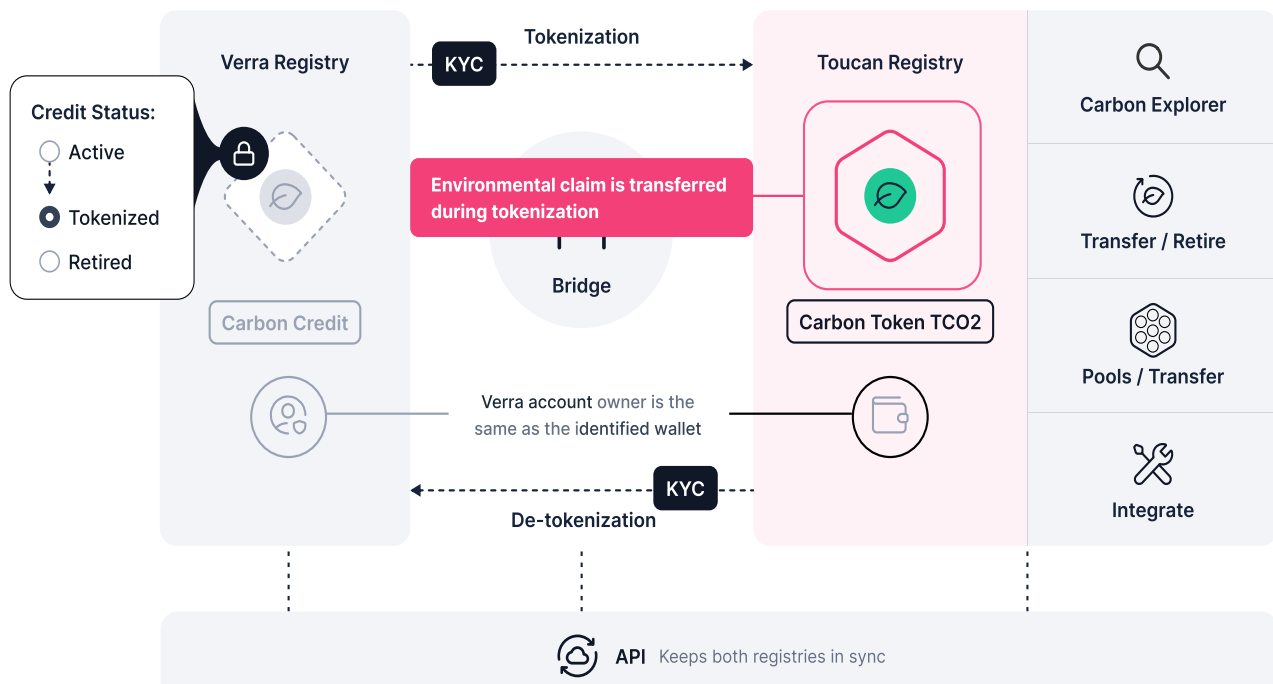F - Safeguards around **retirement** of VCU-based tokens on the tokenization platform.

We will discuss each of these safeguards below.
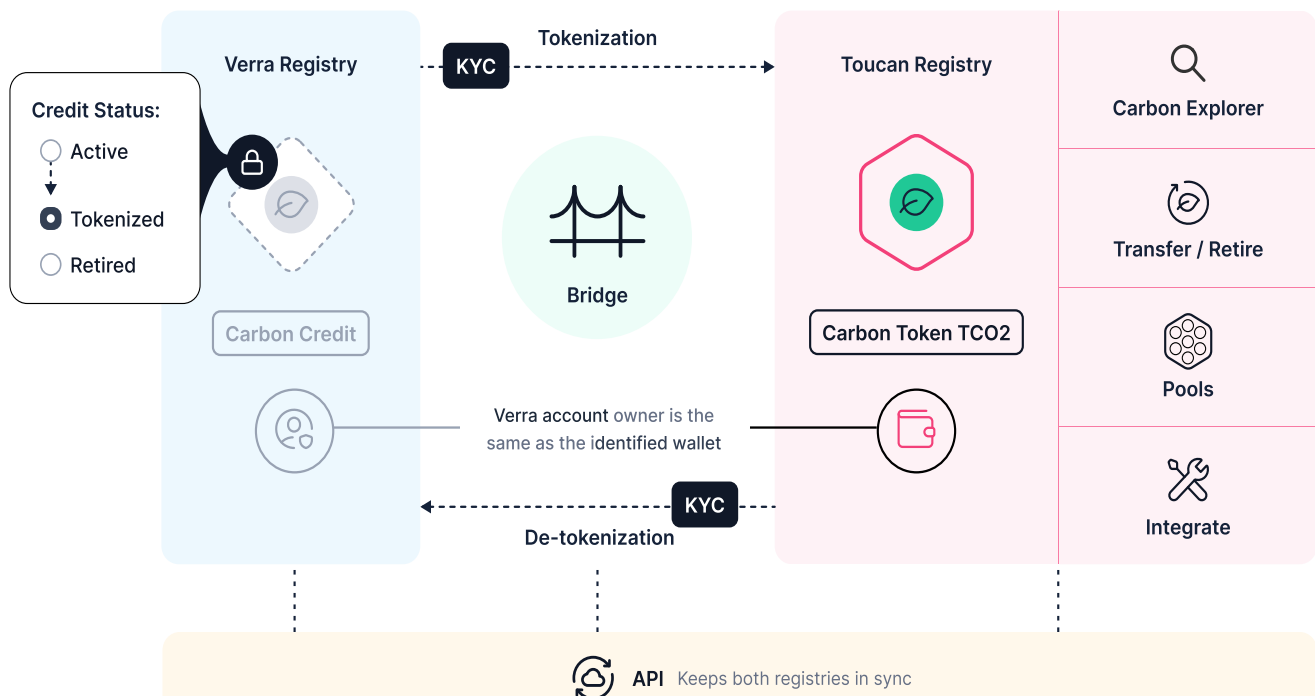
A Safeguards to Preserve Environmental Attributes

In the first instance, it is important to ensure that any VCU-based token issued by a Verra-authorized tokenization platform reflects the core work of Verra in verifying the environmental integrity of the VCU in terms of additionality, permanence, and other environmental attributes.

To ensure this fundamental environmental integrity, Verra should require that any authorized tokenization platform immutably **connects all of this environmental attribute data to the token**, including but not limited to the project name, vintage, and country of origin.

Toucan's tokenization approach already meets this requirement. Our approach turns a VCU into a TCO2, which is a full representation of the underlying VCU. **All environmental attributes** of the VCU are accessible in a digital format and remain linked with the TCO2 through any and all subsequent transfers. Toucan has been using a process that links the serial number with an NFT representing a batch of VCUs,

which under current assumptions will also be used in the version 2 architecture that is to be co-designed with the standards. The environmental attributes of carbon tokens on Toucan can be changed, albeit with an **immutable, transparent, and verifiable audit trail**. Because of its public blockchain architecture, this link can be verified by any party. Toucan will implement further features to support this verification possibility in a user-friendly interface.

Toucan recommends that Verra requires the establishment of an **API-based communication** and synchronization system between any Verra-authorized tokenization platform and the Verra registry. This system could link tokens to VCU batches through unique serial numbers. Toucan is prepared to work with Verra and its registry software provider on the development of such an API system, to ensure that there is an **immutability of off-chain data history**, like the immutability of on-chain history. With access to the existing software and documentation Toucan would happily support the development of such an API materially and with its own resources.

A separate issue of environmental integrity is the **carbon footprint of the tokenization platform itself**. Toucan recommends that Verra requires any authorized tokenization platform to build on a **"proof-of-stake"** rather than "proof-of-work" blockchain system. The former is **>99% less carbon-intensive** than the latter. Toucan has always built upon proof-of-stake blockchain systems, and we recommend that Verra require the same from all endorsed tokenization platforms. In addition, Toucan has taken the additional step of using 50% of fees to retire TCO2s, thereby making Toucan a **planet-positive platform**.

B Safeguards to Prevent Double-issuance
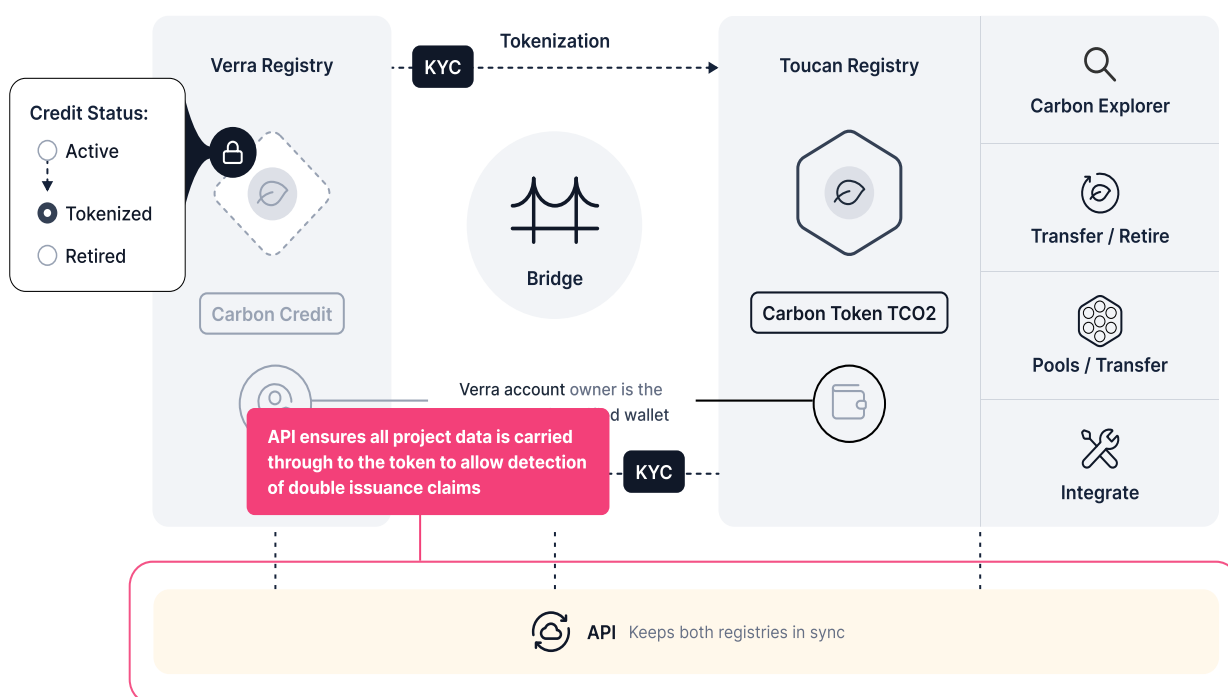
We understand "double-issuance" to refer to a scenario in which two standards organizations—e.g. both Verra and another organization—issue carbon credits for the same tonne of CO2eq that has been reduced, avoided or removed from the atmosphere by a carbon project.

As a threshold matter, Verra itself provides the first defense against double-issuance through the **verification phase of (D)MRV**. Double-issuance cases that have a root cause prior to the certification process—e.g., a scenario in which a project is certified twice and generates credits in two

different registries—cannot be directly prevented via a tokenization solution that starts after certification.

However, a properly-designed tokenization platform can **help detect such cases**. Provided that the **API between Verra and the Verra-authorized tokenization platform ensures that the token carries all of the project characteristics of the VCU**, then users of the platform will be able to detect a tokenization claim for the same project by a non-Verra standard. For example, Toucan's existing platform creates an **auditable, bi-directional link** between the standard's registry and the platform. A core feature of Toucan's

platform is that users can identify any mismatches between tokens in the on-chain registry and credit data in the corresponding standard's registry.

And, indeed, there has been **no recorded case** of use

of double-issued credits attributable to the Toucan platform. In this way, an automated and auditable system such as Toucan's can improve on the **ratings, reviews, and verification services** that currently undergird the Voluntary Carbon Market.

C Safeguards to Prevent Double-use
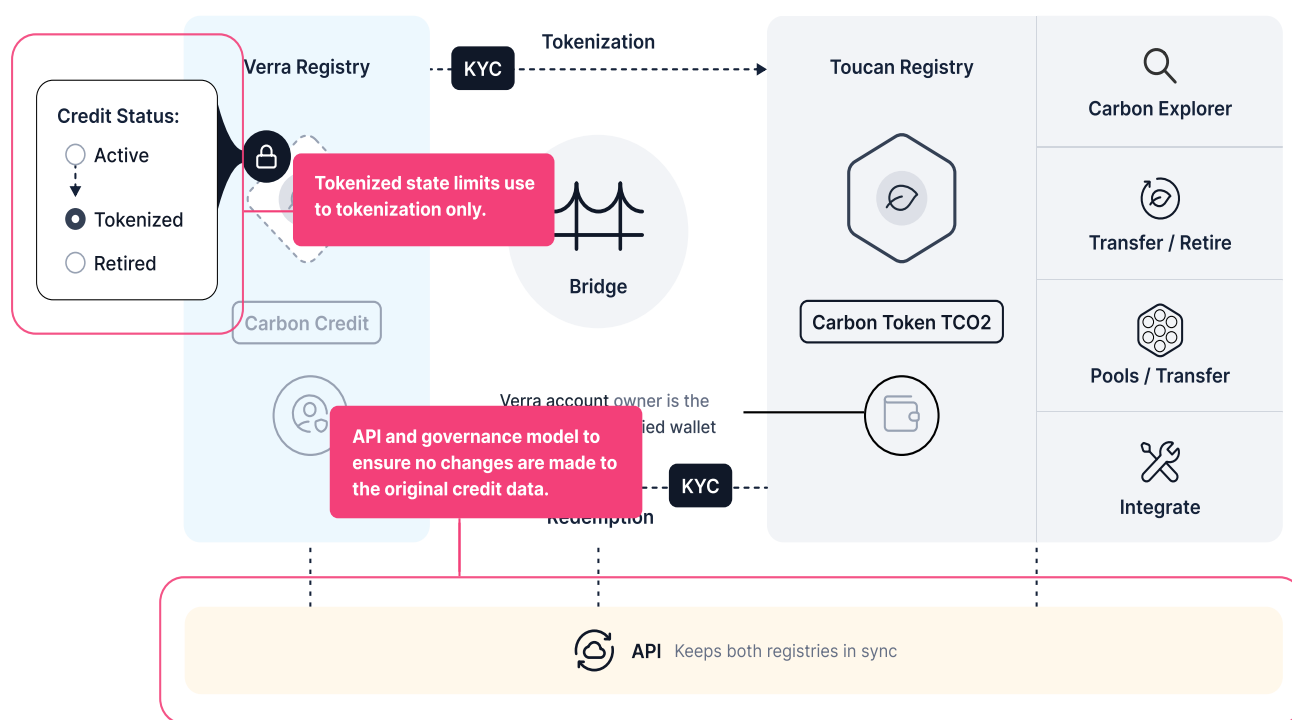
We understand 'double-use' to refer to a scenario in which an entity sells, transfers, retires, or otherwise uses both a VCU and a token based on that VCU.

To safeguard against double-use, Toucan recommends that Verra establish within its registry a **global 'tokenized' account**, that can hold tokens without ownership attribution and into which an account holder may transfer a VCU that it wants to tokenize. This is necessary rather than keeping it locked as 'tokenized' in the user's account so that the tokenized version can be transferred between users without that ownership needing to be

updated in the registry.

Toucan further recommends that Verra **prohibits an account holder from transferring already retired VCUs** into the 'Immobilization accounts' or Tokenized Accounts for tokenization purposes (see glossary for further explanation of these terms). VCUs in the Tokenized Account would be available **only for tokenization** and not for any other use, including transfers or retirements.

Under this approach, the **underlying environmental claim is transferred into the token** on the Verra-authorized tokenization platform. The token now

represents the credit, pointing back to the original VCU which exists in a 'tokenized state' in the registry. The **credit in the registry is the 'pointer' to the actual credit on-chain**, that now exists in the form of a token with immutably linked attributes.

To make this system work for all users, it is also important that Verra ensure that tokenized VCUs in the Tokenized Account **cannot be modified** in any way by the original VCU holder or by Verra itself.[3] In a new, integrated approach, Verra and the Verra-authorized platform would **share a joint responsibility** in ensuring that tokenized VCUs in

the Tokenized Account remain unmodified. This shared management would be implemented through a **well-functioning API solution and an appropriate operating and governance model**. We suggest defining the best operating model in a next stage, with the focus on **security and efficiency, with matching of capacity and responsibility**. In any case, all involved parties need full monitoring options so transparency is ensured. Toucan can lead this process if a sufficient mandate, access and control is given and take end-to-end operational responsibility. We would expect this to be specified in a service level agreement between involved parties as part of entering an implementation phase.

D Safeguards Around the Transfer of VCU-based Tokens on the Tokenization Platform
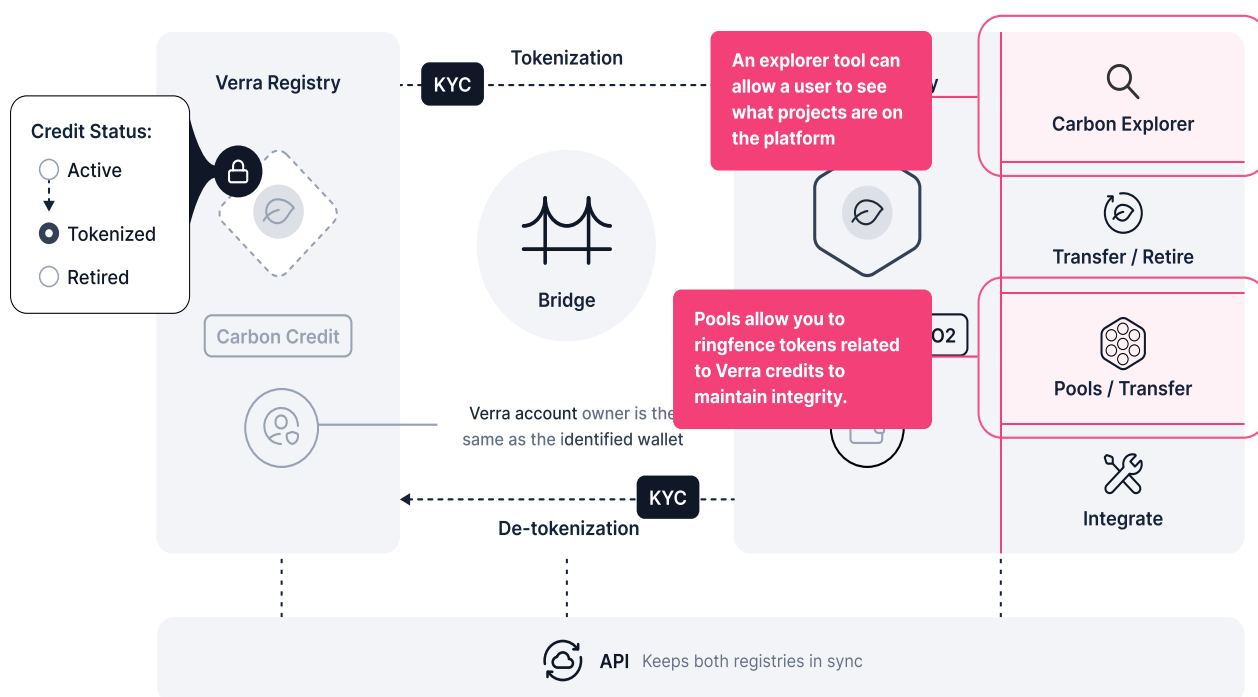
Verra necessarily has significant interests in the tokenization of VCUs and the redemption of tokens back into the Verra registry. By contrast, as discussed in our answer to Q6 below, transfers of VCU-based tokens entirely within a tokenization platform do not affect Verra's legal interests as they do not present risks of environmental integrity.

Nonetheless, Toucan recommends that Verra only approves **tokenization platforms that have certain minimum protections for their users**. For example, the platform should be required to demonstrate that it has a system in place to notify users that they use the platform at their own risk and need to be familiar with standard crypto principles and procedures. With respect to transferring tokens into pools or other

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[3]Toucan's original retirement-based approach to tokenization relied on an assumption that Verra does not modify retired VCUs.
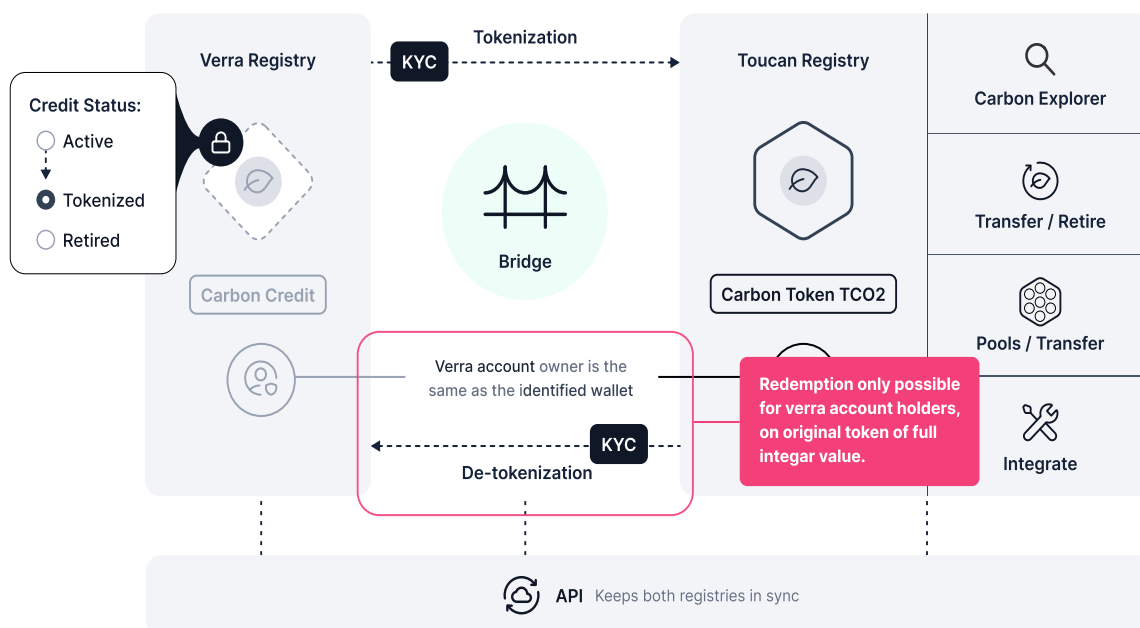
applications on the tokenization platform, Toucan recognizes that Verra may have reputational interests that it wants to safeguard. For example, Verra might prefer that pools that use tokens based on VCUs not commingle those VCU-based tokens with tokens created by programs that do not have commensurate environmental integrity principles. If Verra has such a concern, it could be resolved by publishing guidelines that restrict pooling of VCU-based tokens with tokens backed by credits issued by certain other identified standards programs. It can also be **controlled through hard requirements that are coded into the pool smart contract**, only allowing comingling of tokens from specified standards. Pool-launching entities and their associated web3 accounts determined to be violating such terms could be blocked from redeeming their VCU-based tokens back into the Verra registry.

We share the sense of responsibility to protect retail investors. Therefore we suggest any platform should implement an **explorer-type solution that allows each user to easily see which credits are on the platform** (projects, vintages) and especially which credits are in which pools.

In any event, the requirements applied to the use of VCU-based tokens should be comparable, **not stricter**, than today's use of credits and associated trading solutions and products. Hence demanded practice of KYC/AML should be in line with the relevant asset classification and comparable to current market practices. **The carbon assets today are unregulated assets. They are not securities in either the legacy market or the on-chain market.** It therefore makes no sense to apply securities-related requirements if these make any business operations a lot more complex and possibly uneconomical.

The current carbon market knows financialized products, like spot-exchange products. The **deeper the liquidity** and the more transaction a market or pool is able to handle without large trades eading big price swings (slippage) the **more robust and valuable** such an offering is for its users. Users that engage with these products and solutions are doing it on a voluntary basis and with the decision that the potential obtained value is worth the risk. In our view this does not require further safeguards, then what has been put in place by existing market players of non-crypto exchanges and tokenization platforms in operation today.

E   Safeguards Around the Transfer of VCU-based Tokens Back into the Verra Registry ("Redemption")

Consistent with the proposed IETA Principles, Toucan strongly urges Verra to establish a system by which a holder of a VCU-based token can reverse the tokenization process—"burning" the token on the authorized tokenization platform and reactivating the underlying VCU. The IETA Code of Best Practice refers to this process as "redemption."

Allowing for redemption of a VCU-based token has a number of benefits, including **expanding the range of** transactions available in the Voluntary Carbon Market and **minimizing inefficient arbitrage** between on-chain submarkets and off-chain submarkets. Any arbitrage between Verra and tokenized platforms should not be based on unwarranted obstacles of going from one platform to the other but rather on the relative benefits of one over the other to the asset holder.

Toucan recommends that the redemption process involve the following elements:

1   **First, redemption should only be possible for users that hold a Verra account.** The identification for tokenization and redemption has already been established as part of its registration or activation for tokenization.

2   **Second, Verra should authorize redemption only on the basis of an original VCU-based token (e.g. TCO2).** No user should be able to redeem an original VCU from a pool token like NCT without first unbundling it into the project and vintage-specific TCO2.

3   **Third, redemptions should only be possible for full-integer values of tonnes.**

As long as individuals do not hold accounts with Verra, we don't see it feasible to enable redemption for individuals/retail investors that have no means to sell on credits in the legacy market.
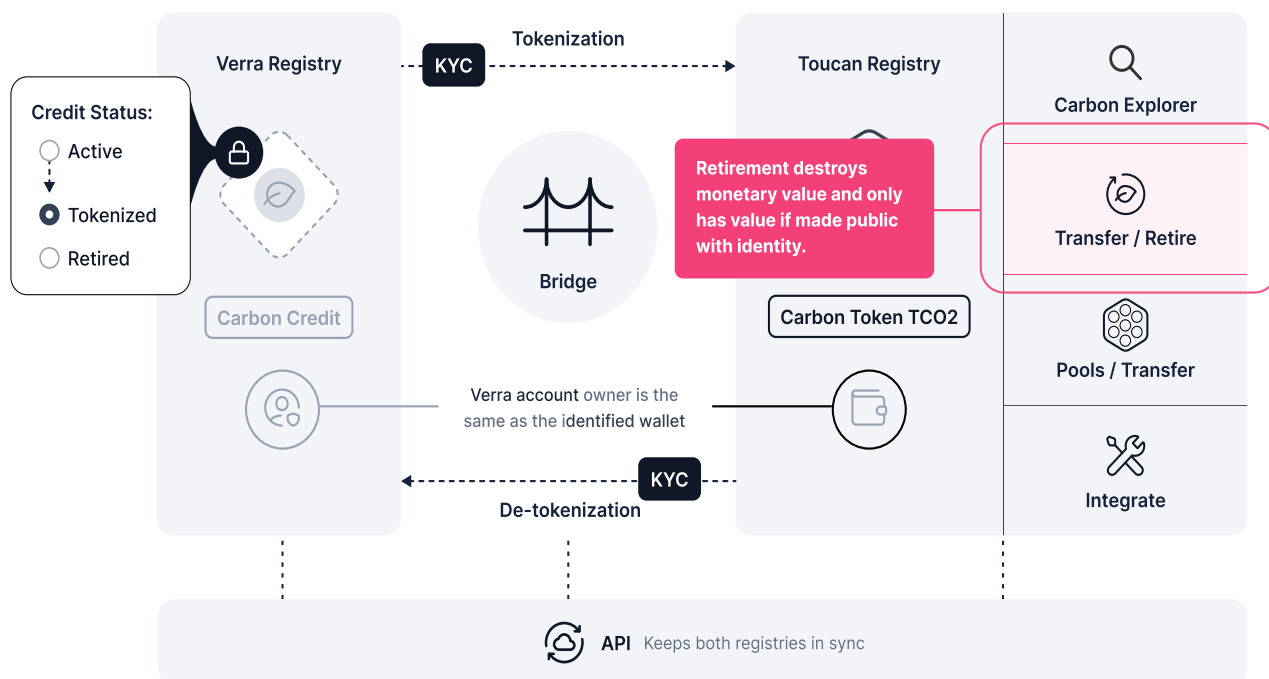
(See the more detailed discussion regarding identification requirements in response to Q6 below.)

F   Safeguards Around Retirement of VCU-based Tokens on the Tokenization Platform

One of the most significant benefits for users participating on Toucan's platform is the ability to retire tokens. In fact, Toucan will measure its impact partly on the basis of how much retirement occurs across the ecosystem it powers, and all application builders are heavily encouraged, and at certain stages rewarded, to **establish on-chain carbon sinks—mechanisms** to retire these carbon

Credit Status:
- ○ Active
- ● Tokenized
- ○ Retired

Verra Registry — KYC — Tokenization — **Toucan Registry**

Carbon Credit

Bridge

Retirement destroys monetary value and only has value if made public with identity.

Carbon Token TCO2

Verra account owner is the same as the identified wallet

KYC — De-tokenization

Carbon Explorer

Transfer / Retire

Pools / Transfer

Integrate

API Keeps both registries in sync

tokens. In such cases, an authorized tokenization platform should be required to "burn" the VCU-based token (permanently removing the tokens from circulation) and notify Verra through the API interface. Given that in the direct approach, the environmental claim is embedded in the token, Toucan's position is that the **burning/retiring of the token should allow the token holder to make the retirement claim**. Hence an on-chain generated retirement certificate should be valid, as long as the state is updated on the Verra registry from **'tokenized' to 'retired'** immediately. This can be reliably automated with an API integration. In a secured model, with the retiring of the VCU-based token only being finalized once the source registry state is updated to 'retired' in a second step, it would not allow for the environmental claim to be consumed on the basis of burning the token.

Environmental integrity is not an issue with such activities provided that the tokenization platform conforms to the requirements described above with respect to: (1) **immutably linking data** on environmental attributes with the token and (2) having **appropriate safeguards** against double-issuance and double-use.

In addition, as discussed below, the act of retirement has built-in safeguards against money laundering and similar risks. By its nature, **retirement destroys the monetary value of the token**, removing any money laundering risk associated with the task. Further, retirement only has value for an entity **if the entity makes public** both the retirement and its own identity.

In any event, Toucan's platform makes it visible that **only tokens directly representing a VCU** (TCO2) can be and have been retired, not pool tokens. We suggest that it should be a general requirement, to only allow retirements and claim-making on the basis of retired VCU-reference tokens.

The retirement process through a tokenization platform should also enable users to state retirement reason, beneficiary etc. and get a **retirement certificate in the form of an NFT**, storing this data forever.

Any further safeguards and policy around claim-making would go beyond current market practices and therefore should not be part of near-term tokenization requirements but may be a topic for future implementation.

Q2.

What infrastructure and processes do entities participating in the immobilization (tokenization per IETA) approach need from Verra?

As discussed above, Toucan strongly supports Verra's proposal to implement the Reference Tokenization approach and advocates for the Direct tokenization design. Even if Verra considers Native Tokenization, we recommend to start with Reference Tokenization on a faster timeline, which also gives the option for learning in a more ring-fenced setup as one explores Native Tokenization going forward.

To implement the approach, the existing Verra registry data schema needs to be extended to model the following new data fields:

- New and distinct states for VCUs - 'tokenized' for the 'direct tokenization' approach and 'immobilized' for the 'secured/custodian' model;
- Clearly documented and sufficiently scoped API to interact programmatically with the Verra registry, to search for and read VCU data, and to tokenize, untokenize, and retire VCUs;
- Access to project data and market-relevant unit labels to provide correct metadata for tokens;
- The beneficiary of the tokenization, i.e., which authorized tokenization platform, blockchain, and web3 account receives the VCU-based token after the VCU is immobilized and tokenized/bridged to the platform (unless the existing retirement field can be re-used for this action); and
- Extension of the Verra registry UI to allow for tokenization;

In addition, as discussed in the answer to Q5 below, we recommend that Verra extend KYC procedures when **opening an account or activating an account for tokenization**—including integration of waivers and disclaimers into mandatory fields for **linking web3 accounts** for tokenization with the respective Verra accounts.

In order to replicate on-chain retirements in the source registry, the **API system needs to be able to update data fields** (e.g. status) related to VCUs, including being able to partially update the status of a serial number – for example to make a retirement for less VCUs than the full batch serial number – and be returned two serial numbers – the first serial number for the retired VCUs and the second serial number for the batch of leftover unretired VCUs. This requirement is identical to what happens in the registry during retirement today. Such an event will also need to be **reflected publicly in the registry to show the retirement including retirement details**, and the remaining tokenized VCUs.

Q3.

Is there a market need to provide for the reactivation of immobilized VCUs, as long as any related crypto instruments or tokens were not used for any other purpose and are destroyed as part of this reactivation?

There is a compelling market need to provide for reactivation of tokenized VCUs—which we refer to as redemption. Since Toucan's launch in October 2021, we have been advocating for a clear procedure for such a process to enable a 'Bi-Directional Bridge' and always wanted it be in line with our deterministic principles and approach. Therefore we are excited that Verra is exploring this option.

A two-way bridge will eliminate the 'lock-in' risk in an on-chain market and enables token holders to respond to price differences both in the off-chain and the on-chain market. Traders performing arbitrage trades will bring prices on-chain and off-chain closer together. This will increase the likelihood of **high-quality credits being tokenized**.

With off-chain-on-chain arbitrage being less of a reason to bring carbon on-chain, the focus will move more towards the **value of liquidity around pools** and other tokenization benefits that drive the demand, e.g. greater utility and integration of carbon into on-chain protocols, treasuries, and on-chain climate action claims and labels.

When Verra fully integrates with authorized tokenization platforms, we expect a **higher number of institutional players embracing tokenized carbon**. This will bring traditional demand on-chain, thereby reducing the need for redemption and reactivation. However, we assume these systems run in parallel for the time being because some organizations will need to implement internal processes and clearances to handle tokenized credits.

For these reasons, we urge Verra to **maximize flexibility for users and credit owners** while using safeguarded infrastructure by allowing the reactivation of tokenized VCUs.

Q4.

What are the legal and operational implications of a crypto instrument or token being fractionalized?

We assume that the term "fractionalized" in this question refers to a condition in which a token represents less than one tonne rather than the process of disaggregating a batch of tokens into individualized one-tonne tokens.

Toucan Protocol sees significant value in providing the market with the utility of dealing in sub-tonne denominations. Many promising retail use cases, such as Point-of-Sale compensations, event-based compensation (like taking a flight or attending a conference) or real-time compensation (i.e. compensating for a days' worth of datacenter operation) are already being requested by the demand-side and will likely become cornerstones of a universal scaling of carbon markets. Today, these use cases are being served already, but in highly inefficient and intransparent manner via manual aggregation of tonnages by cost-intensive intermediary business, which keeps this market segment from scaling more rapidly.

Additionally, **programmatic demand** introduced by a rising number of web3 projects (e.g. building in compensation into micro transactions) can provide significant additional **capital to flow towards climate action**. Toucan Protocol firmly believes that these use cases should be supported with adequate accounting utility that enables transparent, auditable records of sub-tonne retirements.

Since in the direct approach the **environmental claim is embedded in the token, sub-tonne retirements**

should be possible. Toucan is able to address the challenge of synchronization back with the source registry in a design and implementation phase together with Verra, while tokenization, synchronization and de-tokenization will continue to be only possible in whole numbers of credits.

Provided that all of the safeguards identified in our response to Q1 are in place, we do not see any additional legal implications associated with fractionalized tokens.

Q5.

What KYC checks (and in relation to which jurisdictions) should Verra apply to platforms before authorizing them to issue, market, and/or transact in crypto instruments or tokens that are backed by VCUs?

Toucan recommends that the KYC check consist of:

(1) government-issued license to do business or articles of incorporation;

(2) a copy of the passport of an individual authorized to sign documents that bind the platform; and

(3) the identify of any individuals or entities with ownership or governance control above 25% or more of the platform

Q6.

Should platforms be required to apply KYC checks on all entities that hold crypto instruments or tokens, or just on the entities that receive, use, or are the beneficiaries of such instruments?

As a preliminary matter, Toucan observes that Verra's Registry Terms of Use only require an Identification Process of an entity when that entity seeks to establish an account in the Registry. Verra has not mandated an Identification Process for the wide variety of transactions that occur outside its Registry. In particular, Verra has not required that retailers or brokers implement KYC checks or other identification procedures on the individuals or entities for whom they are managing VCUs—even though such arrangements account for a large portion of the current marketplace.

There are good reasons to carry over this distinction between Registry-related transactions and non-Registry-related transactions to Verra's interactions with its authorized tokenization platforms. Verra may have a legally cognizable interest in robust identification procedures for transactions that directly "touch" its public Registry system, i.e., tokenization and de-tokenization/redemption. By contrast, **Verra does not have a legally cognizable interest in transactions of VCUs and VCU-based tokens** outside of the Registry.

Further, **Toucan has no legal requirements** in its relevant jurisdictions to perform KYC checks or implement AML procedures for the on-chain activities of the tokens it has issued to date. As discussed above, tokens issued by Toucan are neither securities, payment tokens nor stablecoins.

In addition, it is important to recognize that such procedures **impose transaction costs and complexity** on the tokenization service provider. That is why such procedures generally have been reserved for securities transactions involving large entities and large volumes—for which the risks of fraudulent activity (or money-laundering) are greatest. There is **no justification to mandate** extensive identification procedures that are comparable to AML regulations

on publicly-accessible, decentralized, fully transparent and permissionless blockchain platforms when such procedures are not mandated for other entities that transact in VCUs.

Nevertheless, **Toucan appreciates that Verra is seeking some form of additional assurances** about activities involving VCU-based tokens. We are pleased to enter into a dialogue with Verra about risk-based approaches that can address Verra's concerns while allowing the ecosystem of carbon credits to thrive and grow. We do have sufficient technical expertise and capacity to implement more restrictive mechanisms on a use-case / threshold basis but advise against a generalized approach that lifts requirements way above the current market practices.

With these considerations in mind, Toucan recommends the following approach, following the principle that **both tokenization and redemption should adhere to the same logic of identification**. Furthermore it is assumed that both tokenization and redemption is limited to professional parties and entities that hold an account with a standard like Verra, for which identification is common.

Identification Procedures Required:

Tokenization.

As discussed above, Verra has a cognizable interest in establishing the identity of an entity seeking to tokenize VCUs for itself or for a beneficiary. Accordingly, we recommend that an **identification process related to tokenization** is added to account holders, either directly by Verra or through a 3rd party that manages obtained data and issues a verification of identification. On that basis, we recommend that **any authorized tokenization platform requires a verification of identification** before giving access to its tokenization and redemption processes. In the case of identification performed by Verra, the verification status can be submitted through a whitelist or API. If delegated to a 3rd party, Toucan can implement a check for **proof of verified identity** via specialized 3rd parties, which after having completed the identification process, will provide the relevant web3 account with a portable ID in the form of an NFT token.

Redemption.

Verra also has a cognizable interest in actions that reactivate VCUs in the registry through the redemption process. Therefore, we recommend that an **identification process is included in the redemption steps**. As with tokenization, this process could build off of Verra's own procedures, as we assume that the redeeming entity already is an existing account holder. As such, web3 accounts would be either **whitelabeled through an API or be provided with a NFT** token upon having completed the identification process with specialized 3rd parties.

In Switzerland, the jurisdiction that Toucan operates from, Toucan's setup and the classification of its tokens **does not require reporting on AML or sanctions list monitoring**. However Toucan preserves the right in the Terms & Conditions of use of the Bridge that it has the right to block any web3 account that has links to sanctioned entities/individuals, as well as any money-laundering/terrorist financing links.

Identification Checks Not Required:

On-chain Transfers of Tokens.

For the reasons discussed above, Toucan recommends that Verra **does not mandate** that authorized tokenization platforms implement identification procedures for token-related transactions occurring entirely on-chain—including transfers of tokens among web3 accounts and transfers of tokens into and out of pools. As noted, Toucan commits to entering into a dialogue with Verra about how to implement **reasonable risk-based AML measures** for on-chain activity.

On-chain Retirements of Tokens.

We **do not see any rationale** for requiring an authorized tokenization platform to impose an identification procedure on an entity that retires its on-chain tokens. The retirement of a token **does not create monetary value and therefore does not have associated fraud or money-laundering risks**. Instead, retirement of a token creates reputational value and therefore is, by its very nature, **a very public act**. It does not occur in the shadows. For these reasons, Verra should not require identification procedures on entities that retire tokens on-chain.

Q7.

What, if any, information on crypto instruments or token holders should be made publicly available?

Toucan recommends that Verra require any authorized tokenization platform to make the following information publicly available:

Web3 account addresses that are linked to accounts in the Verra Registry
Upon retirement of a token:
    Beneficiary;
    Beneficiary's web3 account address; and
    Reason for retirement[4]

Toucan already makes this information available.

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[4]It is our understanding that Verra's Registry Terms of Use do not currently require public identification of the beneficiary of a retired VCU.

Q8.
What textual amendments are advisable to address anti-fraud considerations related to the association of third-party crypto instruments and tokens with VCUs?

Below are Toucan's initial recommendations for amendments to the Registry Terms of Use. We welcome a dialogue with Verra on further edits.

Amendment A:

1.12 Subject to the Terms of Use, Verra consents to Users marketing and transacting Related Instruments that are issued by an Authorized Tokenization Platform.

> **Explanation:**
>
> The existing definition of "Related Instruments" is broad enough to encompass Verra-authorized tokens. Clause 1.9 suggests that a User may not market or transact a Related Instrument without Verra's consent. In order to clarify that Verra need not consent to each and every token-related transaction, this amendment establishes that Verra consents to Related Instrument transactions on an Authorized Tokenization Platform.

Amendment B:

1.13 Verra will only approve a cryptocurrency or tokenization entity as an Authorized Tokenization Platform if that entity:

    (a) is not an individual (being a natural person);
    (b) has indicated its acceptance of these Terms of Use;
    (c) has provided sufficient identification information including satisfying any relevant Know-Your-Client (KYC) or other background check requirements in accordance with the procedures set out by Verra including the Program Rules and Requirements;
    (d) has the ability to monitor transactions on the platform; and

1.14 Verra may, in its absolute discretion, refuse to approve a crypto currency or tokenization entity as an Authorized Tokenization Platform.

> **Explanation:**
>
> This amendment establishes the requirements for an Authorized Tokenization Platform. The language draws from existing requirements in the Terms of Use for a "User."

Amendment C:

3.1 Verra, through the Verra Registry, provides an electronic platform to list Project Activities that follow the applicable protocols and standards for the relevant Verra Program and record the issuance, transfer, retirement, **immobilization or tokenization**, and cancellation of Instruments within the Verra Registry.

Thank you for the opportunity to enter into this dialogue with you.
We look forward to your response.

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