Alberta Advisory

## Introduction

In our first and second parts of this 3-part series, we proposed setting up a GCC Energy-backed crypto currency (named GC3) and estimated that this currency can repatriate USD 100 B in crypto investment outflows.

In this final part, we propose the *Design Principles* of the currency using the six (building blocks) of any crypto currency which are-

1. Supply: refers to who supplies the crypto tokens to the market and in what volumes, frequency and price.

2. Distribution: refers to how the issued tokens are distributed across the various participants of buyers, sellers and intermediaries (e.g. miners, liquidity providers, exchanges).

3. Consensus: refers to how transactions and blocks are validated by the network to ensure authenticity (i.e. prevent the same token to be spent by the same person multiple times, or worse trade in fraudulent tokens).

4. Rewards: refers to how fees and commissions are granted to various participants of the crypto eco system to ensure economic viability and good service.

5. Organization; refers to how the crypto currency will be legally structured in terms of commercial organization, brand and operations.

6. Liquidity: refers to the mechanisms deployed to ensure a continuous stream of trading volumes and prevent stagnation.

We advocate a "*Liberal Design Philosophy*" that favors decentralization, anonymity, deregulation and independence. Let's examine how we translated this design philosophy into each of the six elements above.

## Asset-Back Initial Coin Offerings (ICO)

Any public, private or individual can issue the coin, so long the issuer places in custody the equivalent of 1,700 KwH of energy per token issued. The issuer enjoys the flexibility of-

1. Availing such energy in any form of- Oil, Natural Gas, Solar, Wind, Hydro, etc.

2. Assuring its energy supply through any of the widely used market instruments ratified by the GC3 board of trustees (e.g. futures, OTC forwards, government-backed contracts).

The asset-backed nature of GC3 will help curtail speculative trading, hyperinflation, early adoption stagnation and limited supply anxiety (e.g. Bitcoin's 21 million coins ceiling).

The diversity in energy supplies and market instruments will support inclusion and introduce inherent volatility much needed by market makers and short-term traders.

The 1,700 KwH energy per token equates to a price of $68-204 range, based on GCC published business sector utility tariffs. This is a low entry point for retail, corporate and sovereign issuers.

## Public Private Partnerships (PPP)

GC3 will enjoy a governance board comprised of five (5) key groups drawn from both the public and private sectors. These are- - Issuers, Oversight Institutions (e.g. audit firms, regulators, syndicates), Asset Custodians (e.g. banks, investment companies), Consumer Advocates and Intermediaries (e.g. Market Makers, Exchanges, Brokers).

Crypto currencies evangelize the concept of "Decentralized Autonomous Organizations – DAO" where voting powers are dynamically allocated based on the prevailing economics of the ecosystem. In congruence, we propose the following-

1. Each governance group to have a minimum voting power of 10%.

2. Each governance group to have an 80/20 split of active members who have vested economic interests in GC3, versus independent ones respectively. A vested economic interest can be measured in terms of- number of held GC3 coins, processed trading volumes and/or size of energy assets under custody.

3. Each governance group can acquire up to 20% of additional voting powers should the group make solid commitments to grow the GC3 network by issuing coins, injecting liquidity or acquiring customers.

4. An AI/Statistical model will monitor the network and adjust the additional voting powers dynamically based on what commitments were achieved.

## Proof By Rotating Stake

GC3 will use a consensus protocol that balances the elements of energy consumption, decentralization and inclusion. To this effect, we propose that a GC3 transaction or a block be validated based on a "*Rotating Stake*" algorithm as follows-

1. Three (3) validator pools will be dynamically established, namely- High Rollers, Casual Players and Observers. The "High Rollers" pool includes the Top 5% holders of GC3 coins in circulation. The "Casual Players" includes those who fall in 2nd Quartile of GC3 coin holders. While, the "Observers" includes major intermediaries such as- issuers, exchanges, market makers, brokers, etc.

2. Each pool should have at least 20 members.

3. Each validator pool will have a 30% consensus weight in validating a transaction or a block. To secure a pool's consensus, 10% of the pools members will be randomly selected to validate the transaction or block. If +80% of selected pool's members validated the transaction, that specific pool's consensus will be granted.

4. On a rotational basis, one of the validator pools will be assigned a weight of 40% driven by ecosystem dynamics. For example, rotate weekly when trading volumes are high and response rate is prolonged.

5. A block or a transaction is considered valid when it receives a > 60% consensus.

The proof-by-stake aspect will optimize energy consumption. The rotation aspect will re-enforce independence, while the "3 Pools" and random selection of members aspects will promote decentralization.

## 5-Tier Rewards

We propose that the GC3 ecosystem facilitates five (5) types of rewards, all paid in GC3 crypto coins. These are-

1. ICO Rewards: collected by an issuer in exchange of supplying new crypto tokens to the market and hence expanding the tokens in circulation. This reward can be expressed in terms a discount rate applied to the initial offering.

2. Mediation Rewards: collected by exchanges, brokers and market makers to cover their operational expenses in facilitating the buy and sell of crypto coins against various fiat and other crypto currencies.

3. Custody Rewards: collected by custodians for holding and managing the underlying energy market instruments based on which the GC3 coins were issued.

4. Validation Rewards: collected by engaged members of the validation pools to cover their operational expenses in validating transactions.

5. Governance Rewards; collected by GC3 management team to pay for salaries and overhead.

The exact reward rates will be dynamically adjusted based on the prevailing dynamics of the ecosystem. For example, Mediation Rewards may be increased to compensate for a major drop in GC3 coin value and a spike in low-value trading transactions.

## Organization

We propose to structure GC3 as a non-for-profit organization (NGO) similar to industry associations. The GC3 NGO will own the brand, the core protocol of the blockchain and the related ecosystem of user groups, developer communities, node operators, etc.

The GC3 NGO will benefit from tax advantages, pragmatic regulatory oversight and decentralized governance. GC3 NGO will not directly own the underlying assets, but rather provides agency-like services to facilitate the GC3 life cycle of issuance, trading and development at cost-recovery basis.

It's critical that GC3 maintains its jurisdiction-, operation- and technology-wise independence, trekking the path charted by Ethereum with necessary adaptations.

## Market Makers

As indicated earlier, GC3 should capitalize in part – but not in whole – on the existing capital market infrastructure of the GCC, manifesting in eight (8) capital markets and +80 million local and international investors.

Yet, GC3 would require an additional nudge in the form of Market Makers. These special dealers will offer off-regular-hours trading services through internalization, engage in high frequency trades (HFT) through trading sessions and attract external flows from international investors.

Afterall, famous market makers such as Jane Street and Citadel Securities often process as much as 10% and 25% respectively of the annual trading volumes in the US, specially for the retail and SME segments.

Thank You.