Australian Sustainable Business Group

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Greg Hunt
Minister for the Environment

Re: Adoption of a Block Chain [Open Ledger] Method for Carbon Credit Transactions

Summary

International carbon credit trading is already an established market with many countries, and smaller jurisdictions, offering excess credits for exchange of emissions or to purchase. Impeding this process is the usual difficulties in dealing with international markets: Taxation arrangements, fraud, crime and currency fluctuations can affect the efficiency of carbon credit transactions. Additionally, there is the cost of settling each transaction.

The emerging and expected growth in carbon trading requires an innovative step to reduce transaction costs and provide certainty and trust in an efficient manner.

Use of a blockchain system offers many advantages on speed, efficiency, trust and low costs for the carbon markets. It should also almost eliminate carbon credit fraud for validated units.

Considering that the Australian Government is the generator of ACCUs it is in a world leading position to use a blockchain system for its carbon unit's issuance and trading.

Adoption should assist businesses more efficiently trade carbon credits internationally. Industry members have been calling for a better way to trade carbon credits for some time. As a consequence, the blockchain for carbon credits idea is strongly supported by our members.

Additionally it will assist other Governments by providing a secure and effective means to track and manage transactions. Australia will be seen as a leader in this type of digital transactions for environmental benefit.

About ASBG

The Australian Sustainable Business Group (ASBG) represents a wide range of businesses and industry dealing with greenhouse reduction and environmental issues. With approximately 130 members, ASBG considers that a blockchain system will deliver a more efficient carbon trading market for our members and all NGER registered organisations across Australia. Further information about ASBG can be found on our website www.asbg.net.au.

ASBG also provides services in the environmental field and has a range of experts supporting this.

A significant difficulty with carbon credit trading is differences in transaction methods and definitions between jurisdictions. These add significant costs and impede transactions. If Australia took up the use of a blockchain trading platform it should encourage other governments and carbon trading establishments to follow suit.

ASBG would like to see the blockchain system or equivalent expand internationally for carbon trading. This would provide a far increased rate of carbon trading making it easier to trade and benefit from a more globally balanced system. Australia has an opportunity to be a leader in this field using this new technology.

Background – What is a Blockchain or Open Ledger system?

The blockchain algorithm, also referred to as an *open ledger approach,* has been made famous by Bitcoin. There are now many cryto-currencies in operation, Biotcoin was an early if not the first to use the blockchain system. Blockchain systems are now being considered by:

- The Philippines Government for trading its Peso
- The Australian Stock Exchange for share transactions, due to the lower and quicker costs of settlements via this system
- Overstock for its stock to by-pass stock exchanges altogether
- Many Banks including Commonwealth Bank, ANZ Bank are supporting development of systems and software based the Blockchain.

Description

A blockchain is an append-only database of transactions which has two key elements:

1) a shared, replicated ledger, and
2) a distributed database synchronizing mechanism known as a "consensus algorithm".

In a blockchain, each transaction must reference a balance received from a previous transaction and must be cryptographically signed by the legal approver of the transaction. The linked transactions form an exact chain of title over time.

A blockchain is just one type of distributed ledger, not all distributed ledgers necessarily employ blocks or chain transactions. For more information on how it works consider this link.

How will it work?

ACCUs will be issued as the current auction system. ACCUs can then be issued using a blockchain which enables all of them to be traded where appropriate or when a time stamp permits this. Auditing and confirmation of gained ACCUs will be required before they are releasable on the market. Other credit units such as RECs can be added in at any time.

Trade using ACCUs will become fluid, low cost and robust. Fraud will be virtually eliminated.

Is Fraud an Issue in Carbon Trading?

Yes.

Fraud occurs at both the site/project level and in the trading of carbon credits. While a blockchain cannot deal with site/project level fraud it can limit fraud involving trading of carbon credits.

The Stockholm Environment Institute undertook a random sample of 60 Joint Initiative Projects and found barely 14% of the Emissions Reductions Units (ERUs) issued were "credible". Fully 73% were not credible, and 12% were questionable. Site/Project fraud will always require auditing and verification to provide international creditability.

Trading fraud is also common; typical the pressure selling of false or untradeable credits, for example see this link from the Financial Conduct Authority of the UK. If ACCUs are supported by the blockchain

it would be a very quick check to determine if ACCUs being sold are genuine under a blockchain system.

Why Have a Blockchain?

Here is an advantage disadvantage table for use of a Blockchain system for Australian carbon credits.

Advantages	**Disadvantages**
Low transaction costs – at least < 10% of other traditional settlement costs	High set-up costs – initial arrangements and regulatory and system arrangements are additional to existing systems
Speed of transaction and settlement – settlement can take days, but is virtually instantaneous	Reliant on IT systems around the world to operate reliably –this is a very low risk
High level security – shared ledgers are by design almost impossible to fraud. Any 'cheating' will show up	
High level of international acceptance for trading ACCUs as a robust commodity	
Operations of the system can be outsourced to 'data-miners' for a small allocation of credits	
Can be interlinked to other credit systems with high certainty, whether they are other blockchain systems or not	
Australia can be a leader in this area – with other carbon trading credit systems following	
Can be either run integrated with Government processes or credits issued and carbon exchanges undertaking the blockchain trading	Australian Government to consider if it wishes to be integrated or permit, most likely international carbon trading rooms take the lead in blockchain systems
High certainly and security with an open ledger approach will permit transparent assessment of international taxation arrangements	Blockchain can only deal with properly audited carbon credits. Actual site/project emissions must be assessed at the site/project by robust auditing
Expansion to include Renewable Energy Certificates and other carbon credit systems in Australia	Requires some arrangement to include other carbon credits available by the Australian Government

Overall

Use of the blockchain system is gaining international support very quickly over a range of markets. Open source blockchain systems are also under development and will be available publically.

Australia is in a good position to take hold of this new technology to purse a world leading carbon credit method ready for international trading.

Taking the lead Australia could generate a jump on the other markets and be in a strong position to on-sell its technology internationally in the carbon trading market.

Next Steps

This is a concept idea at this stage, but is worth further exploration where industry, businesses and government can be seen to be working together to develop a new approach where all, especially the environment wins.

ASBG would like to meet with you and your advisors to explore the use of blockchain technology for carbon and energy efficiency credit trading. ASBG can provide services to assist in the establishment of a blockchain system for carbon trading and details on how the system will work domestically and in international markets.

I look forward to hearing from you and arranging a meeting with your advisors if this idea is of interest.

Yours Sincerely

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