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The power of blockchain for climate action under the Paris Agreement Side Event Report

Overseas Environmental Cooperation Center, Japan (OECC)
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This is a report of a side event held at the 24th Conference of the Parties to the United Nations Framework Convention on Climate Change (COP24) from 3rd December to 18th December 2018, in Katowice, Poland.

- Title : The power of blockchain for climate action under the Paris Agreement
- Date : 18:30 - 20:00, Tuesday, 4th December 2018
- Organizer(s) : Gold Standard Foundation (GSF)
- Venue : International Conference Centre (MCK), Katowice, Poland
- Moderator: Heike Summer (Office of the Environment, Liechtenstein: OEL)
- Presenter(s) : Antonia Sutter (Swiss Development Cooperation: SDC), Juerg Fuessler (INFRAS & Climate Ledger Initiative: CLI), Felipe De Leon (Consultant to the Ministry of Environment and Energy, Costa Rica: MINAE-CR), Sven Braden (LIFE Climate Foundation & CLI), Nick Beglinger (Cleantech21: CT21, Hack4Climate: H4C & CLI), Alain Patrick Medenou (United Nations Framework Convention on Climate Change Secretariat: UNFCCC), Sarah Leugers (GSF/CLI) and Kwon Sei-joong (Director General for Climate Change - Ministry of Foreign Affairs, Republic of Korea: MOFA-K).

Abstract

This side event launched findings from a research project from the “[Climate Ledger Initiative](#)” to help policy makers navigate the opportunities and challenges of using blockchain technology for climate action and implementation of the Paris Agreement.

Session Summary

Sutter, SDC:

- Blockchain can be used to address climate change and the Paris rulebook can be used to show transparency and equity. The question is whether distributed ledger technology has the capacity to contribute to the Paris Agreement?
- It is a key to disseminate knowledge on how to use blockchain as it is relevant today; CLI combines its functions and selected use cases.

- The Paris Agreement uses a bottom-up and decentralized structure and blockchain would match this.
- The Swiss government will support CLI for another 3 years.

Fuessler, INFRAS/CLI: "Blockchain and the Paris Agreement"

- The initiative seeks to use blockchain to achieve the 1.5 degree target. Acceleration is of essence. The CLI includes research and analysis in this application.
- Blockchain is gaining popularity and 10% of the world's GDP will be contained within blockchain.
- The Paris Agreement has characteristics that fit well with blockchain. It is a decentralized, transparent, important role of measures with accounting, tracking and reporting. It facilitates exchange of information and review and is important for private sector players.
- Blockchain is the same in that it is decentralized, trust-based, has peer to peer interactions, is accessible and has distributed systems. It also features increased transparency through a permanent ledger that is efficient and public.
- The risks of the Paris Agreement are a lack in ambition levels and transparency whilst the blockchain pilot or demonstration stage is complex and has high power consumption, or considered just a hype.
 - The CLI report "[NAVIGATING BLOCKCHAIN AND CLIMATE ACTION](#)" is divided into three parts: introduction, blockchain for implementing climate change and composition of a good blockchain section.

De Leon, MINAE-CR:

- The Paris agreement uses a hybrid approach, both top-down in rules and bottom-up through contribution by parties. Cooperative Approaches under the Art. 6 is also one of this.
- A single centralized accounting mechanism for the Paris Agreement (like ITL under Kyoto Mechanisms) is ill-suited since every registry is required to be in sync at all times and there are various activities under Art. 6.2, 6.4 and 6.8.
- Blockchain enables national registries to more efficiently perform transactions and it enables to scale up cooperative approaches. It is currently applied by the UNWFP at a refugee camp in Syria. This proves it can be done in the refugee camp within a resource constrained context and can maintain efficiency in savings.
- It is also homogenous as it won't matter what the contract contains (i.e. language used) under the smart contract technology.

- Costa Rica has started proof of concept of the distributed ledger registry system. This is Costa Rica's new step to proceed country's decarbonization and a mandate by presidential decree. This is developed on an open source software and available for other parties.

Braden, LIFE/CLI:

- Article 13 of the Paris Agreement: MRV and tracking mitigation activities, managing project cycle.
- A distributed ledger technology can be used as a trust system and incentive system.
- There are challenges in MRV: cost of processes in reporting elements, verification etc. Blockchain technology achieves efficiency gained by optimizing certain procedures and automation through different means.
- It can deliver decreased costs in MRV tremendously.
- Article 9: The role of blockchain and its potential in climate finance.
- In-house ledgers can be switched to universal data and this just needs political will.
- However, there is a lack of mutual trust between donors and beneficiaries and blockchain can improve this.

Beglinger, CT21/H4C/CLI:

- It is important to stress the importance of exponential decarbonization and as such, the fourth industrial revolution has set in (cyber physical systems, AI, IOT).
- Distributed systems can promote data utilization to go beyond simple registry more than centralized data and that will give more power to solve problems.
- The team implemented a Hackathon during COP23, inviting 100 hackers to see how they can contribute to this cause.
- Use case example: "REDD-Chain" (forest management, digital MRV was applied). This was done by the winning team of the hackathon and they received financing for this from Climate-KIC.
- This creates a blockchain registry of land data and Artificial Intelligence is also used for predictive analysis to predict where deforestation can occur and help direct funds in areas that need them the most.
- AI can be used in high-res satellite imagery to see land use situation automatically. Cross references are needed through local engagement.
- Smart contract is also equipped in the system and enables donor countries to finance the forest.
- Tokenization allows one to trade tokens corresponding to forest spaces so that small

investors can participate in a new market.

Medenou, UNFCCC:

- The UN is looking at using blockchain. For example, UNFCCC with collaboration with UNEP plans to establish a UN platform to take climate actions especially focusing on scope 2 and 3 emissions from UN organizations. Such climate actions include procurement, supply chain, electricity consumption etc.
- An initiative outside the UN family is to incentivize the use of low carbon wood in construction which is being discussed with the Government of Finland. The whole supply chain from forest owners to individuals is used. Distributed Ledger Technology (DLT) can be used in this case.

Kwon Sei-Joong, MOFA-K:

- The South Korean government is also pursuing DLT initiatives in order to try to achieve goals more efficiently. “Digital Climate Action Initiative (DCAI)”
- It has many benefits that are important to deployment of the Paris Agreement more effectively. The applications of blockchain are wide and found in different articles within the Paris Agreement.
- ETSs don’t fully cover transport and buildings, so participants can join the digital platform to reduce emissions through blockchain application effectively.

Panel discussion with Q&A

Q1. Where does the Swiss government see CLI in the future in terms of support from your agency?

A1. Antonia Sutter, SDC:

- It looks interesting as it offers good governance and the technology is complex and offer a lot. It has potential and concrete use cases.

Q2. Where do you see blockchain helping the most?

A2. Braden, LIFE/CLI:

- Blockchain can help digitize MRV and help countries see if a mitigation outcome has already been transferred internationally or attributed to climate finance in order to make the Paris Agreement more efficient.

Q3. What will be essentially different in the future with the adoption of these technologies?

A3. Beglinger, CT21/H4C/CLI:

- Forestry, cost reduction of PV, integration of PV into roofs, so renewable energy will be the main beneficiary in sharing data.
- For MRV, there are interesting ways to apply this technology. IOT devices can be used in PV systems to measure MRV.
- Cross referencing of data is possible to verify against for example weather data etc. This means automation will have a trust element in the ledger and incentivize agents to work together, creating a transparent system.

Q4. Is there resistance to this blockchain technology?

A4. De Leon, MINAE-CR:

- Technology systems especially with registries usually face resistance and cause parties to be hesitant which is why it needs to be stated that the UN is doing it in Syria so there is proof that it can be done.

To access the Side Event Reports, please refer to the following link:

English:

https://www.carbon-markets.go.jp/en_info-2/en_info_event/y_2018/cop24-reports/