



Using Blockchain Technology to Support Climate Action and Paris Agreement Implementation **CLI Research**

Jürg Füssler (INFRAS) CLI side event at COP23 in Bonn, 6 November 2017



The Paris Agreement and Blockchain Technology

Characteristics of Paris Agreement

- Transparency as key pillar of PA
- De-centralized, bottom-up approach
- Important role of measuring, accounting, tracking, reporting
- Exchange of information and review
- Important role of private sector players

Risks: Lack in ambition levels and transparency

Features of Blockchain Technology

- De-centralized notary, also for small systems
- Brings trust to peer-to-peer interactions
- Accessibility and distributed systems
- Increased transparency
- Permanent ledger
- Efficiency Smart contracts
- Public or permissioned blockchain

Risks: pilot/ demonstration stage, complex, high power consumption, only a hype?

Backbone – UNFCCC level information system(s)

GHG Inventories (national.) Sources and sinks		Nationally Determined Contributions (NDCs)		
GHG Inventories (corporate, ETS, footprinting)		Company targets , ESG, greensupply chains		
Markets PA Art. 6 Voluntary	Emission Trading Schemes National/Intl. Clubs		Carbon taxes and levies Carbon pricing Carbon asset	Further regulation and mitigation instruments (Feed-intariffs, RECs, PATs, subsidies, results based
ICAO-CORSIA WMO	Nationa instrum	al market ients	reserve BTA	finance, benchmarking,)

Carbon accounting, transparency and reporting

Climate finance for climate change mitigation and adaptation

Fostering green technologies and access (energy prosumers, microfinance, mini-grids, ...)

Blockchain/ distributed ledger technology – potential of decentralized ledger approaches for improved accuracy/ transparency/ trust, accurate tracking, distributed/ pervasive sources, smart contracts, double counting, etc.



Research track: What is the potential of blockchain technology for climate action and the implementation of the Paris Agreement?

of Paris Agreement

Global Stocktake

Source: Climate Ledger Initiative



Preliminary mapping of use of Blockchain/ DLT in climate action

Measuring, reporting and verification MRV

BC for national GHG inventories, Nationally Determined Contributions NDCs, registries, ITMO tracking, Art. 6 mechanism

BC for climate action project cycle management

Crowdfunding for climate

Results based climate finance

BC for energy generation, access and use (RE and EE)

BC for financial inclusion and access to services

Tracking attributes connected to goods

Low carbon B2B, supply chain

Company targets, ESG, carbon pricing



Source: Climate Ledger Initiative

Top-down, UNFCCC led, Governmental oversight

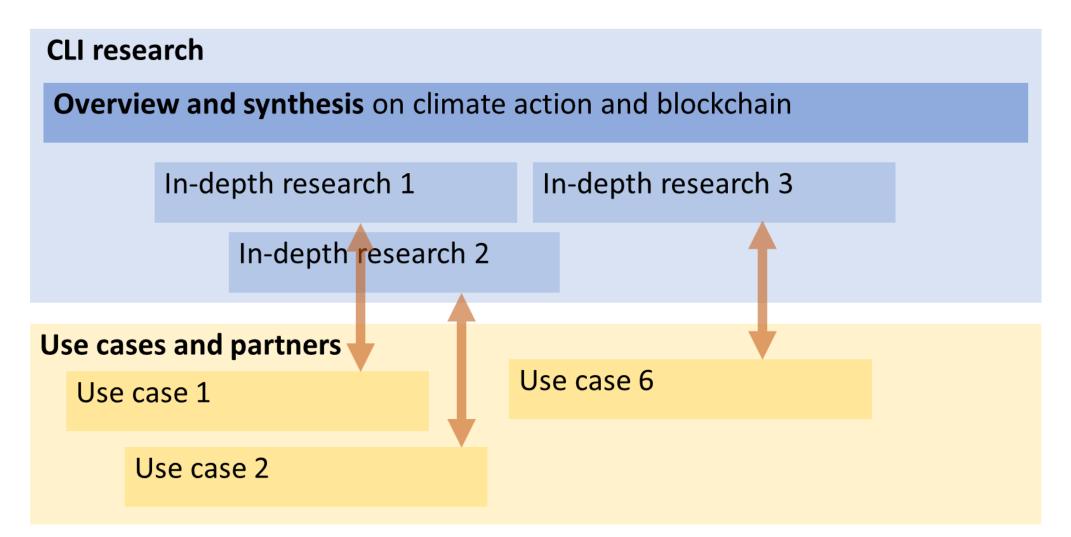


CLI research steps

- What is the **current and future architecture of climate action schemes**? What are their challenges and opportunities?
- What is the status of blockchain technology for applications in climate action?
 What are issues in blockchain technology that need to be solved?
- Where can Blockchain technology deliver new approaches and solutions?
- How does it all work together?



CLI research approach





Thank you.

Jürg Füssler INFRAS, Zurich juerg.fuessler@infras.ch www.climateledger.org