

SB50 – SIDE EVENT

Distributed Ledger Technologies (DLTs) Research and Applications at the UNCC secretariat



Bonn, Germany, 25 June 2019



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United Nations Climate Change Secretariat

Netizens vs. Citizens in order of size (user base or population)

- 1. Facebook**
2. China
- 3. Tencent**
4. India
- 5. WhatsApp**
- 6. LinkedIn**
- 7. Instagram**
8. and 9. United States and **Twitter**
- 10. Snapchat**

Source: UNICEF, 2017



“The Age of Digital Interdependence”

presented to UN Secretary-General António Guterres on 10 June 2019,

20-person Panel co-chaired by Melinda Gates and Jack Ma makes 5 sets of recommendations to:

- Build an **inclusive digital economy and society**
- Develop human and institutional capacity
- Protect human rights and human agency
- **Promote digital trust, security and stability**
- Foster global digital cooperation



Accelerating, encouraging and enabling **innovation** is critical for an **effective, long-term global response to climate change** and promoting economic growth and **sustainable development**

Article 10, the Paris Agreement

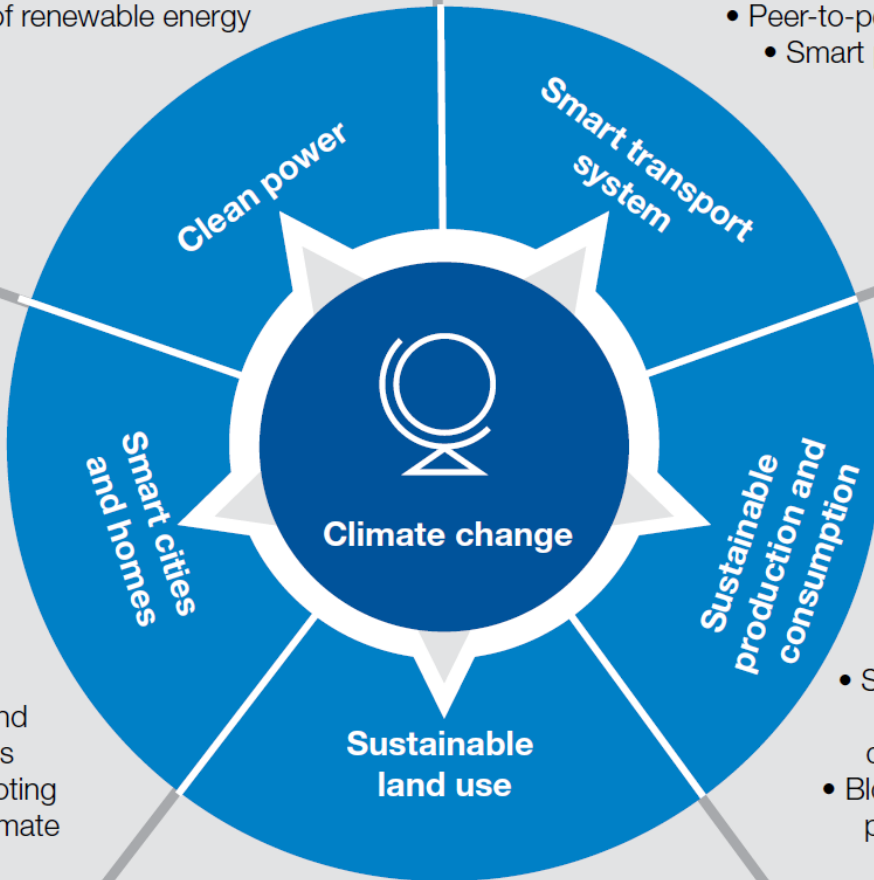


DLT Applications

Climate change

- Peer-to-peer renewable energy-trading systems
- Crowdsale for renewable energy investment
- Optimized distributed grid management
- Authentication of renewable energy certificates

- Data ledger for optimized transport logistics
 - Blockchain-based decentralized delivery networks
- Peer-to-peer vehicle sharing
- Smart parking system for optimized mobility management



- Blockchain-based land, corporate, civil and asset registries
- Citizen loyalty and reward platforms
- Decentralized voting platforms for climate action
- Secure paperless transactions

- Blockchain-enabled sustainable mining
- Automation of data collection and management for better sustainability accounting
- Financing sustainable land use

- Ledger for collection and verification of ESG data
- Soil properties data collation from distributed sensors
- Blockchain-powered platform for carbon offsetting
 - Waste-to-energy blockchain solutions

Source: Building Block(chain) for a Better Planet

WEF September 2018

- DLTs as an enabler for enhanced climate action
- DLTs as resource consumer
- DLTs for **climate policy making**

Defining DLTs through their characteristics

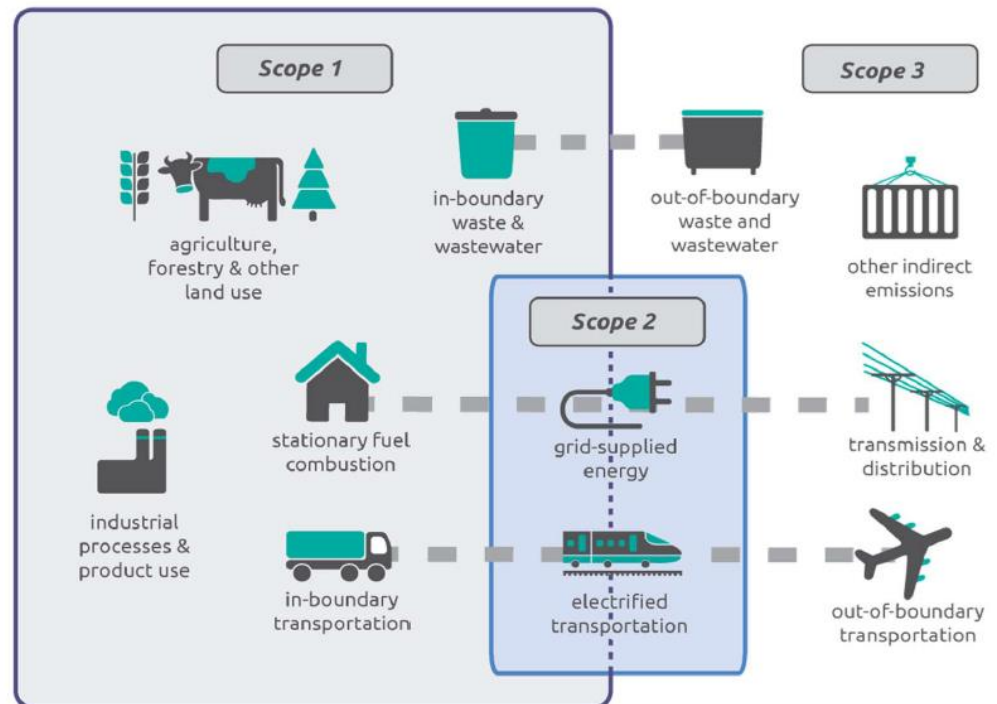
DLTs use a variety of existing technologies to provide a **set of characteristics** which enable key **functions** that are **jointly required** to address these **challenges**

Some characteristics	... that enable	... and used to achieve
Distributed & Decentralized	Resistance to failure	<ul style="list-style-type: none"> <input type="checkbox"/> Transactions with no or less reliance on intermediaries → reducing turnaround & costs <input type="checkbox"/> Enhanced traceability and transparency: full & reliable audit trails <input type="checkbox"/> Avoidance of double counting in exchanges of values <input type="checkbox"/> Enhanced security <input type="checkbox"/> Transactions between individuals/entities that have no or little trust in each other <input type="checkbox"/> Reliable exchange of values (e.g. tokens/units)
Central-administrator free		
Append-only writeable	Immutability and time stamp	
Cryptographically-sealed		
Consensus-based	Resistance to mistrust	
Audience-controlled (Private/Public)		



The UNCC secretariat has initiated a research with the aim of:

- Developing a **decision tree to assess relevance of DLTs** as technical solution to **clearly defined problems**.
- **Application to the measurement of scope 3 climate contribution**



DECLARATION OF DIGITAL INTERDEPENDENCE

How we manage the opportunities and risks of rapid technological change will profoundly impact our future and the future of the planet.

[...]

We declare our commitment to building on our shared values and collaborating in new ways to realise a vision of humanity's future in which affordable and accessible digital technologies are used to enable economic growth and social opportunity, lessen inequality, enhance peace and security, promote environmental sustainability, preserve human agency, advance human rights and meet human needs.

