



Blockchain y mercados de carbono

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Climate Ledger Initiative (CLI)

Mission: to accelerate the momentum for climate action under the Paris Agreement by fostering the use of the emerging blockchain technology.

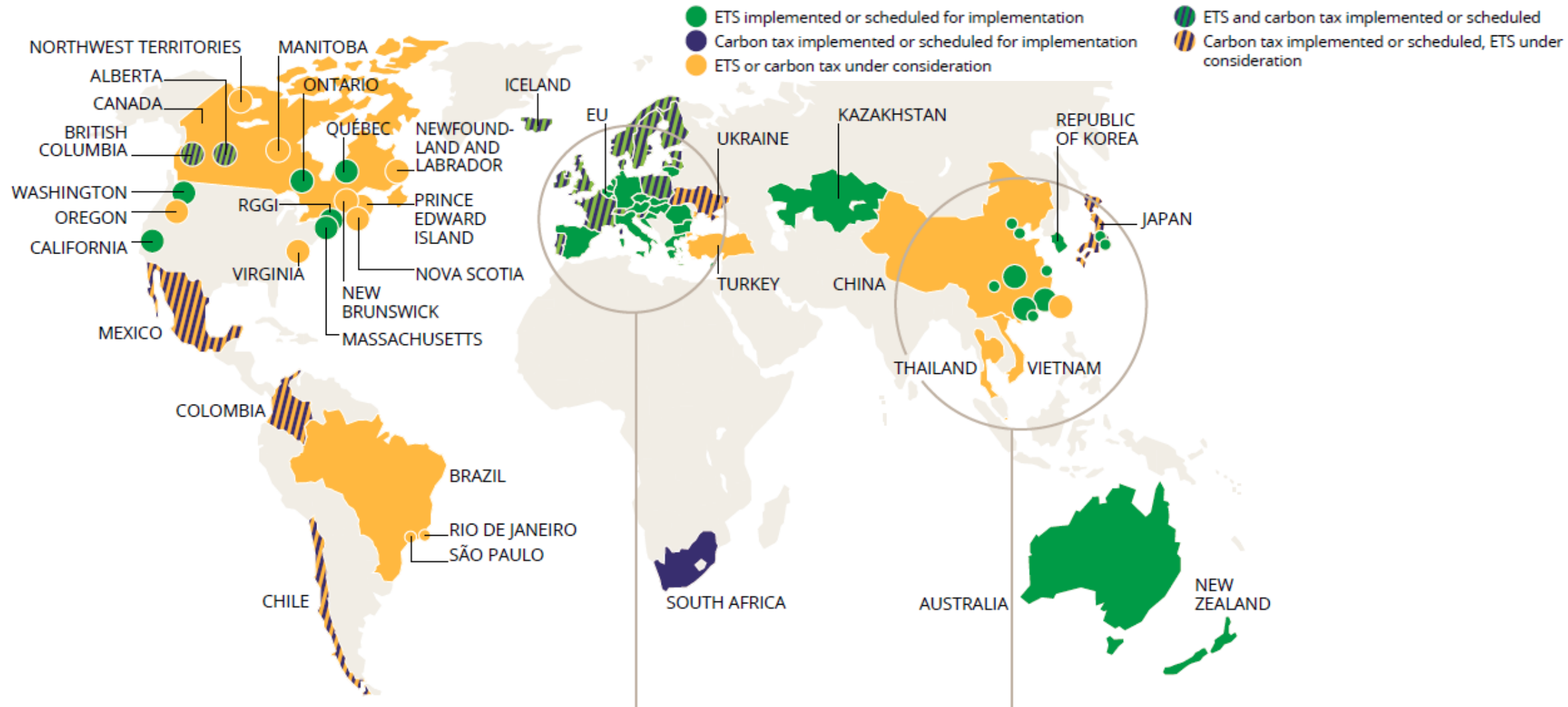
The Climate Ledger Initiative is

- supported by the Government of Switzerland, the Government of Liechtenstein, the LIFE Climate Foundation and EU's Climate-KiC.
- is jointly operated by: Cleantech21, LIFE Climate Foundation, INFRAS and the Gold Standard Foundation.

Outline

- The State of Carbon Markets
- Characteristics of Carbon Markets
- Potential of Blockchain (1) Avoidance of Double Counting
- Potential of Blockchain (2) IOT and AI: Decreasing Transaction Costs of MRV
- Potential of Blockchain (3) Emission Reductions and SDGs – a new asset class?
- Outlook

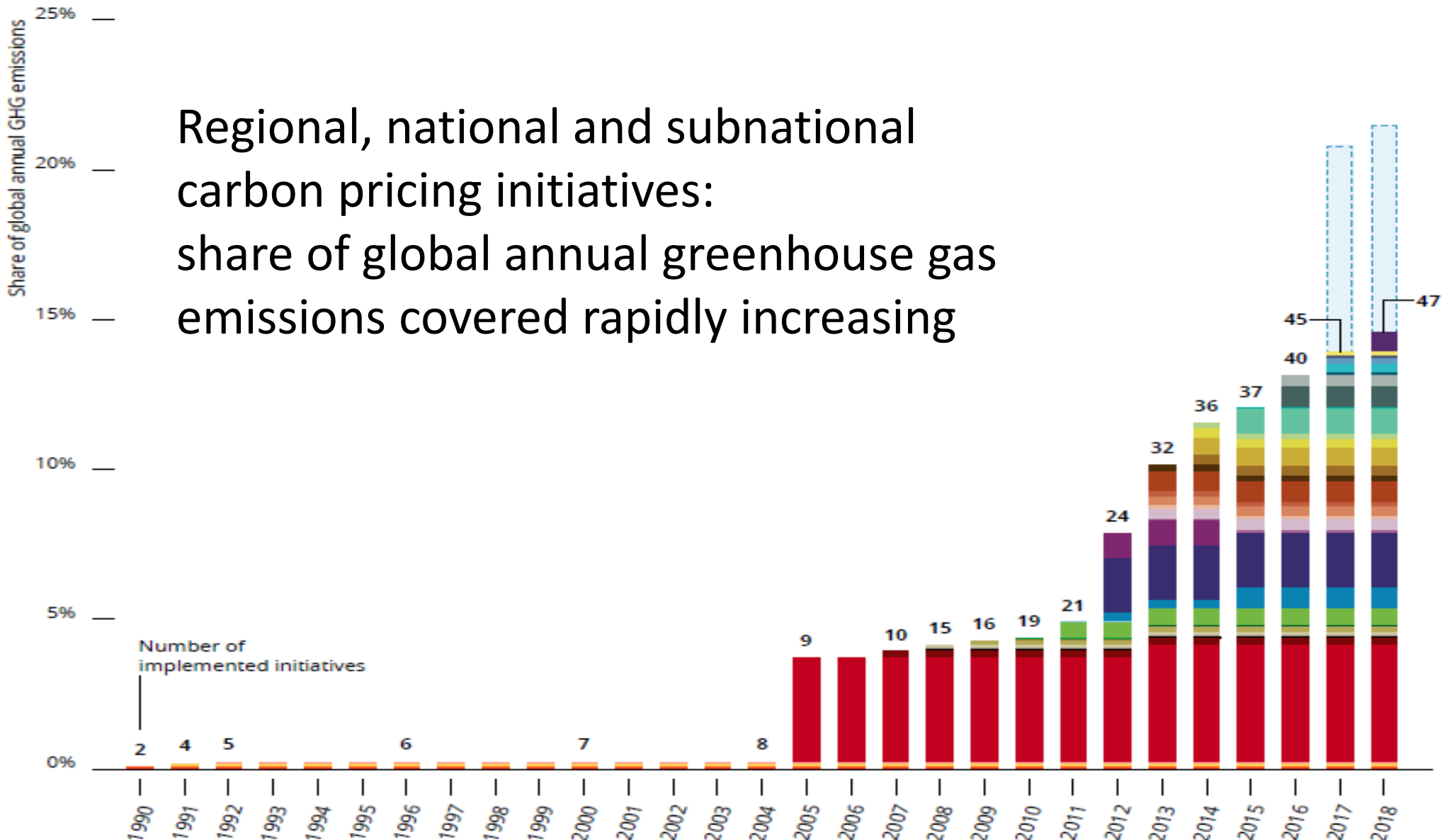
The State of Carbon Markets



Source: State and trends of the carbon markets 2017. The World Bank.

The State of Carbon Markets

Regional, national and subnational carbon pricing initiatives: share of global annual greenhouse gas emissions covered rapidly increasing



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Characteristics of Carbon Markets

Carbon Markets

- regulate emissions of industries by requiring emission rights
- create a shortage of emission rights by reducing the number of available emission rights over time („capping“)
- operate via emission registries
- offer industries possibilities to get engaged into **Project Activities**, which generate emission reductions
- imply transaction costs (verification of emissions, trading, registry, etc.)
- may become a powerful tool to support **Sustainable Development Goals**

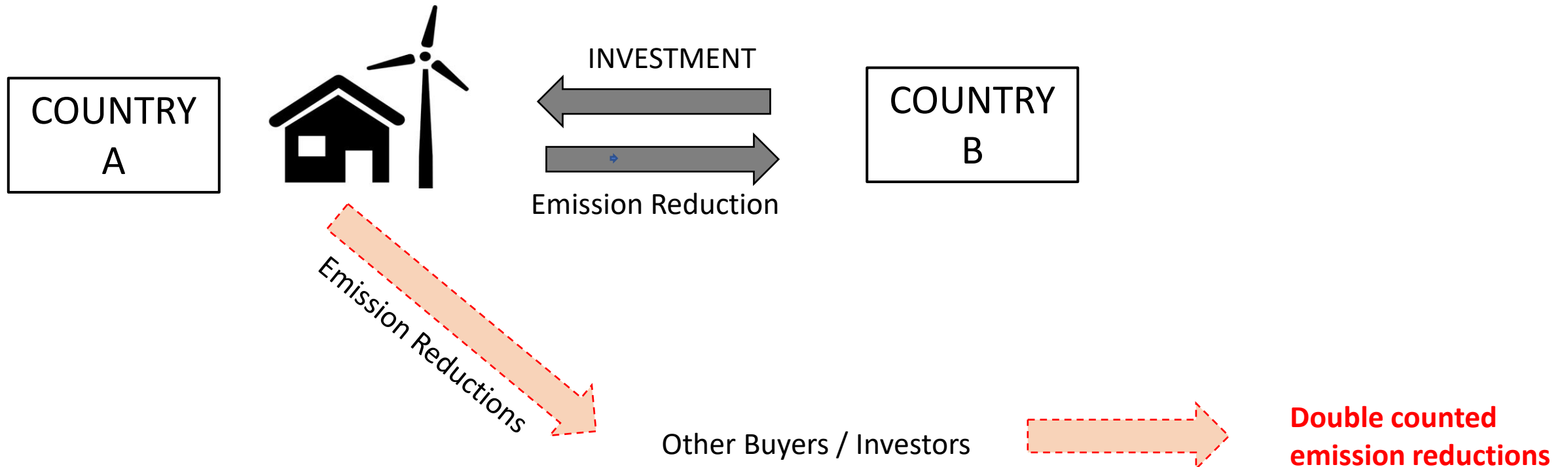
Potential of Blockchain (1)

Avoidance of Double Counting

Potential of Blockchain (1)

Avoidance of Double Counting within Project Activities

How double counting off emission reductions may occur (example):



Potential of Blockchain (1)

Avoidance of Double Counting within Project Activities

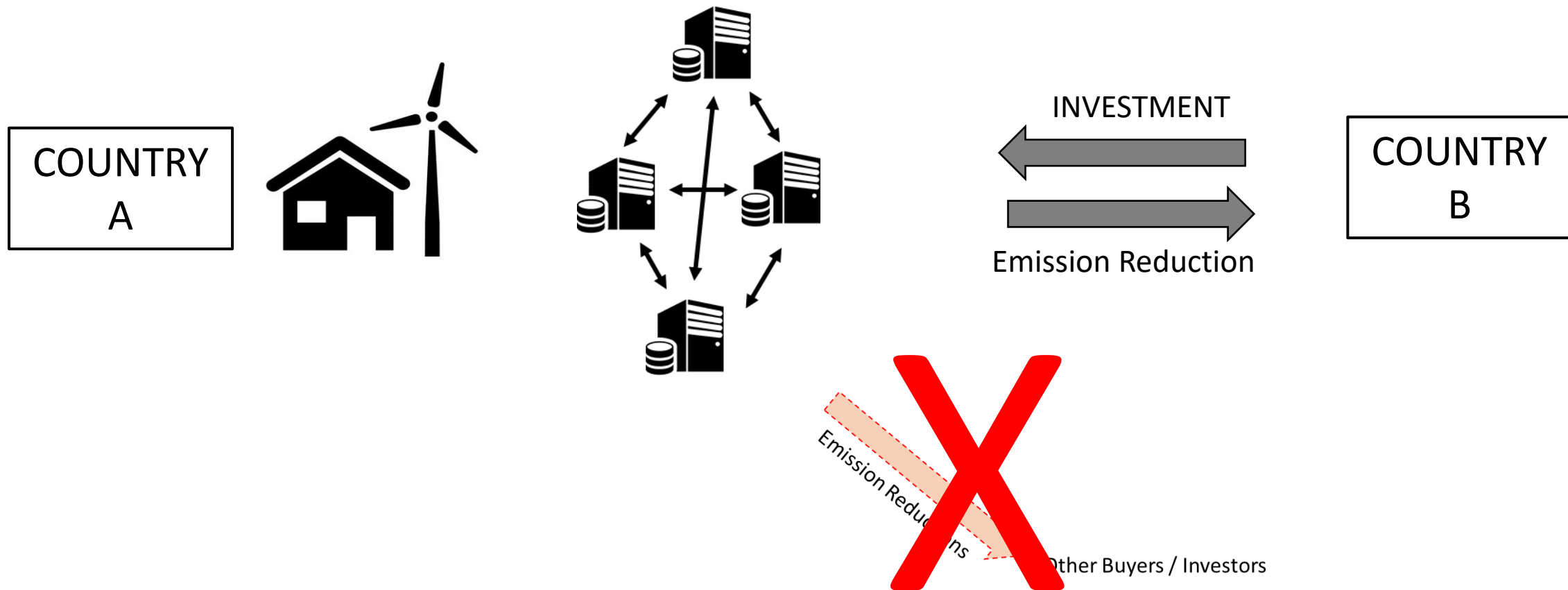
How a blockchain application could adress the challenge:

- Generation of unique identification code of Project Activities (including GPS, time and other relevant information)
- Generation of digital identiy of every emission reduction associated to the activitiy
- Storage of every emission reduction on a transparent universal ledger network (public / private key pairs to allocate unique ownership title to each emission reduction)
- Use Case: ***ITMO Registry***

Potential of Blockchain (1)

Avoidance of Double Counting within Project Activities

How a blockchain application could address the challenge:

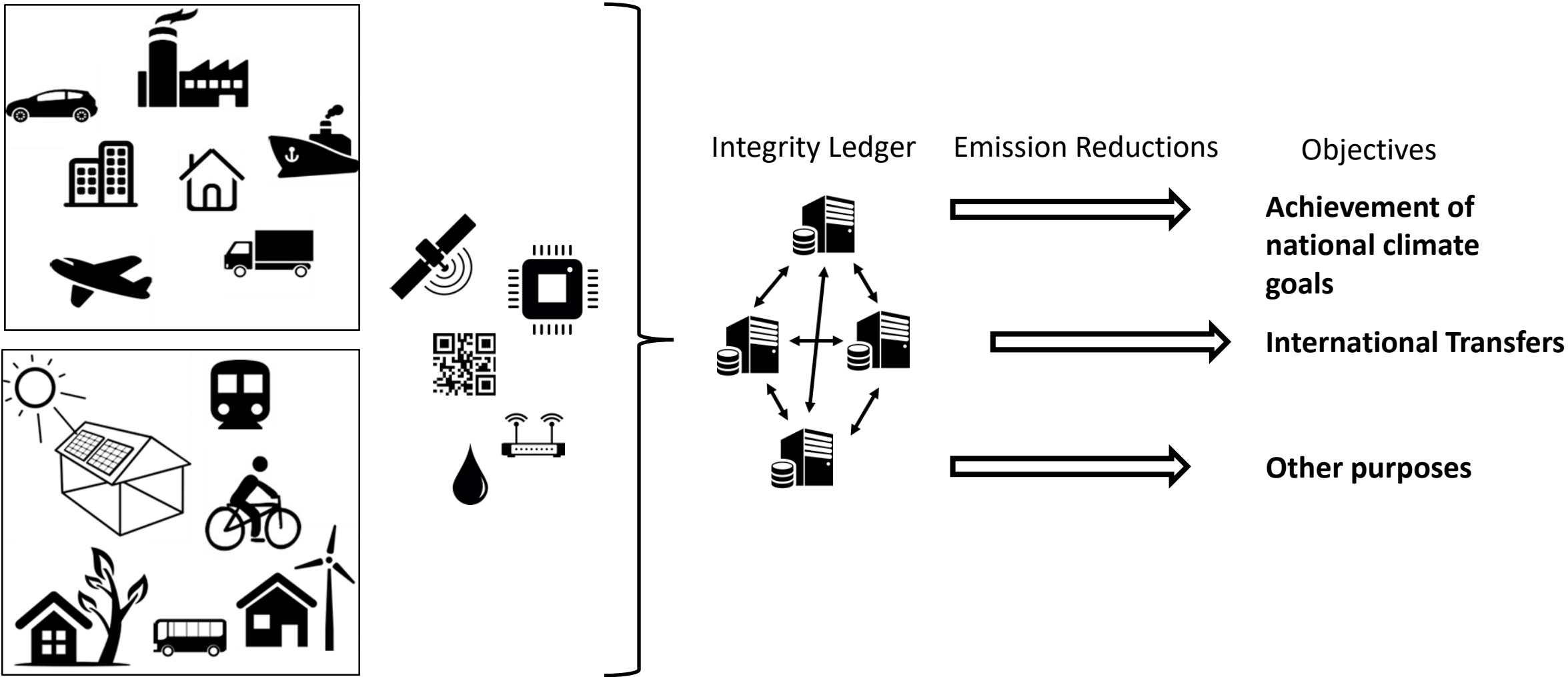


Potential of Blockchain (2)

IoT and AI: Decreasing Transaction Costs of MRV

Potential of Blockchain (2)

IoT and AI: Decreasing Transaction Costs MRV



Potential of Blockchain (2)

IoT and AI: Decreasing Transaction Costs of MRV

- Management of IoT Data (M2M communication) will be embedded in blockchain / DLT networks
- Tokenization will play a key role for realizing true potential of DLT and data generation / management
- Blockchain will decrease transaction costs because certain processes can be automatically performed by smart contracts (verification / validation of emission reports etc).
- Use Case: ***Digitizing MRV***

Potential of Blockchain (3)

Emission Reductions and SDGs – a new asset class?

Potential of Blockchain (3)

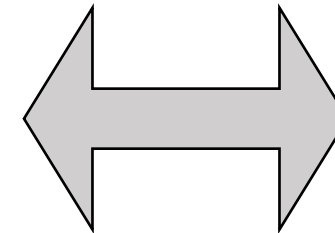
Emission Reductions and SDGs – a new asset class?

- Two landmark decisions in 2015 which may pave the way for a more sustainable development of our economies:
 - 2030 Agenda and its 17 SDGs, and
 - Paris Agreement on Climate Change
- Increasing efforts to link both worlds
- Carbon Markets could integrate relevant SDGs via blockchain application

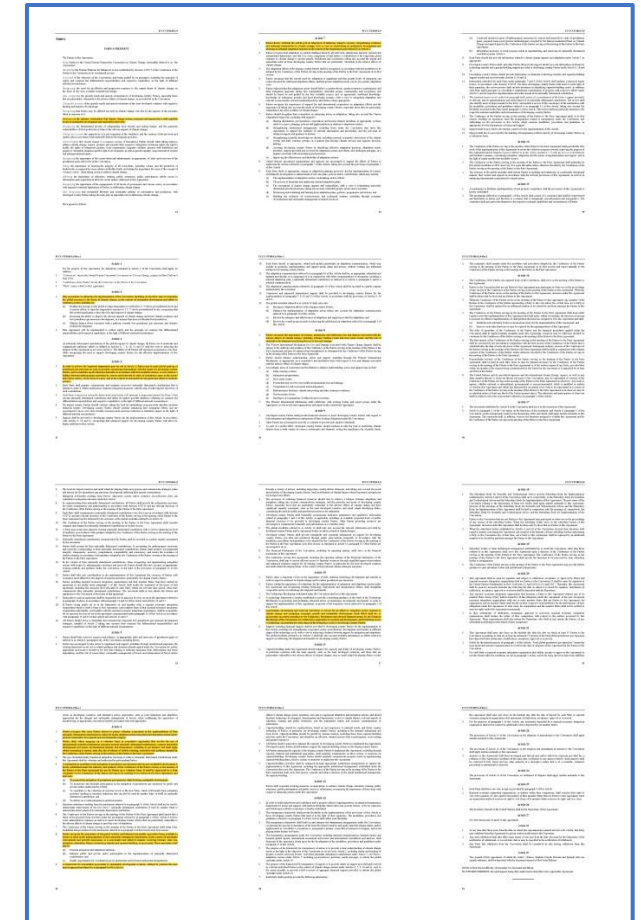
Potential of Blockchain (3)

Emission Reductions and SDGs – a new asset class?

2015 – Adoption of 17 SDGs



2015 – Paris Agreement



Potential of Blockchain (3)

Emission Reductions and SDGs – a new asset class?

- Project activities that generate emission reductions would also generate information about relevant SDGs (Water usage, land, etc)
- Emission Reductions **and** SDG information could be combined and
 - linked to the underlying good or service
 - digitally stored on a blockchain network
- Relevant for life cycle management and supply chains
- Emission Reductions with traceable co-benefits for SDGs will be highly demanded
- Examples to be found in agricultural and forestry sector
- Use Cases: ***Digitizing MRV*** and ***Carbon Cockpit***

Outlook

- Need for a decentralized universal ledger of keep record of emission reductions and eventually for co-benefits for SDGs
- Universal ledger network should be able to track transfers between very different systems (need for “intelligent” transfers)
- Transparent and Accessible: Users such as governmental focal points, but also private institutions such as Gold Standard, Verra/VCS, or NGOs etc.
- Need for capacity building: Tokenisation (Incentives) and community building (effective decentralization)
- Important issues to be addressed: trust, scalability, power consumption, dynamic rules, connectivity, governance

Thank you.



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