DAO IPCI

Integrated Platform for Climate Initiatives - Blockchain ecosystem for carbon markets, environmental assets and liabilities

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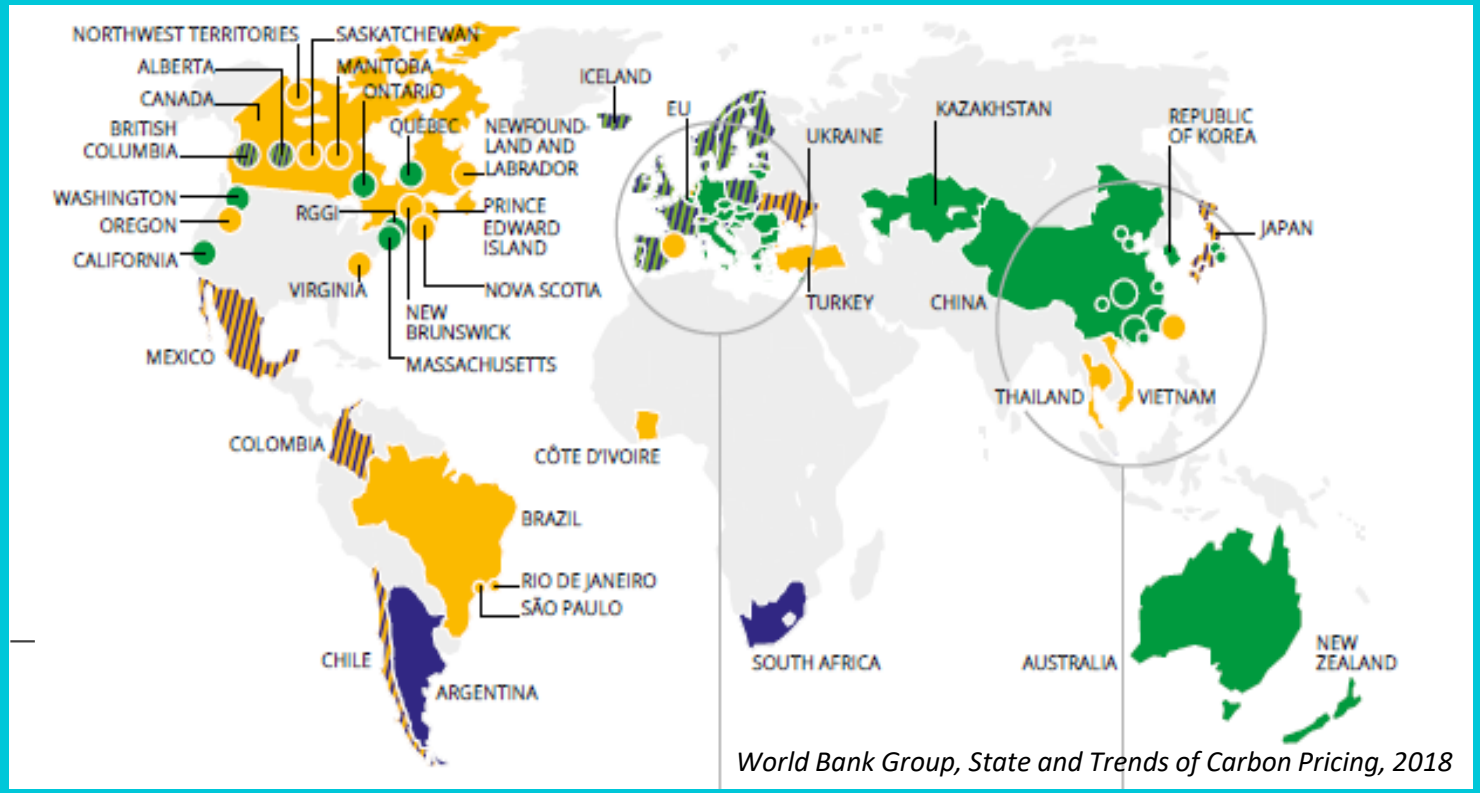
CLIMATE CHANGE MITIGATION PRICING INITIATIVES

- To date 51 fragmented mandatory carbon pricing initiatives have been implemented or are scheduled for Implementation, including 25 ETSs (mostly at subnational level), 26 carbon taxes primarily on a national level NOT INCLUDING sectoral, voluntary, private, corporate and climate change related (ex. Green energy) market initiatives
- Carbon pricing initiatives cover 11 GtCO2e or about 20 percent of global greenhouse gas (GHG) emissions
- In 2018, the total value of ETSs and carbon taxes is US$82 billion (+CORSIA et al, around 800 $MtCO_2$)
- Probably the largest global commodity market in the mid-term perspective
- Dozens of theoretically fungible carbon compliance units (carbon credits or quotas) representing one and the same type of intangible asset and value – 1 ton of CO2-eqv – at the price range from almost zero to $139



World Bank Group, State and Trends of Carbon Pricing, 2018

Blockchain by its inherent properties is most suitable technology for independent carbon pricing initiatives and for their interaction and integration

COMPATIBILITY OF BLOCKCHAIN PROPERTIES AND CLIMATE CHANGE MITIGATION POLICY REQUIREMENTS

UNFCCC Paris Agreement – essentially a protocol of **decentralized** interaction of *many climate change policy* stakeholders including PA Parties and non-Party actors *with no possibility or necessity* for centralized governance over sovereigns

Public programable blockchain inherent properties provide for

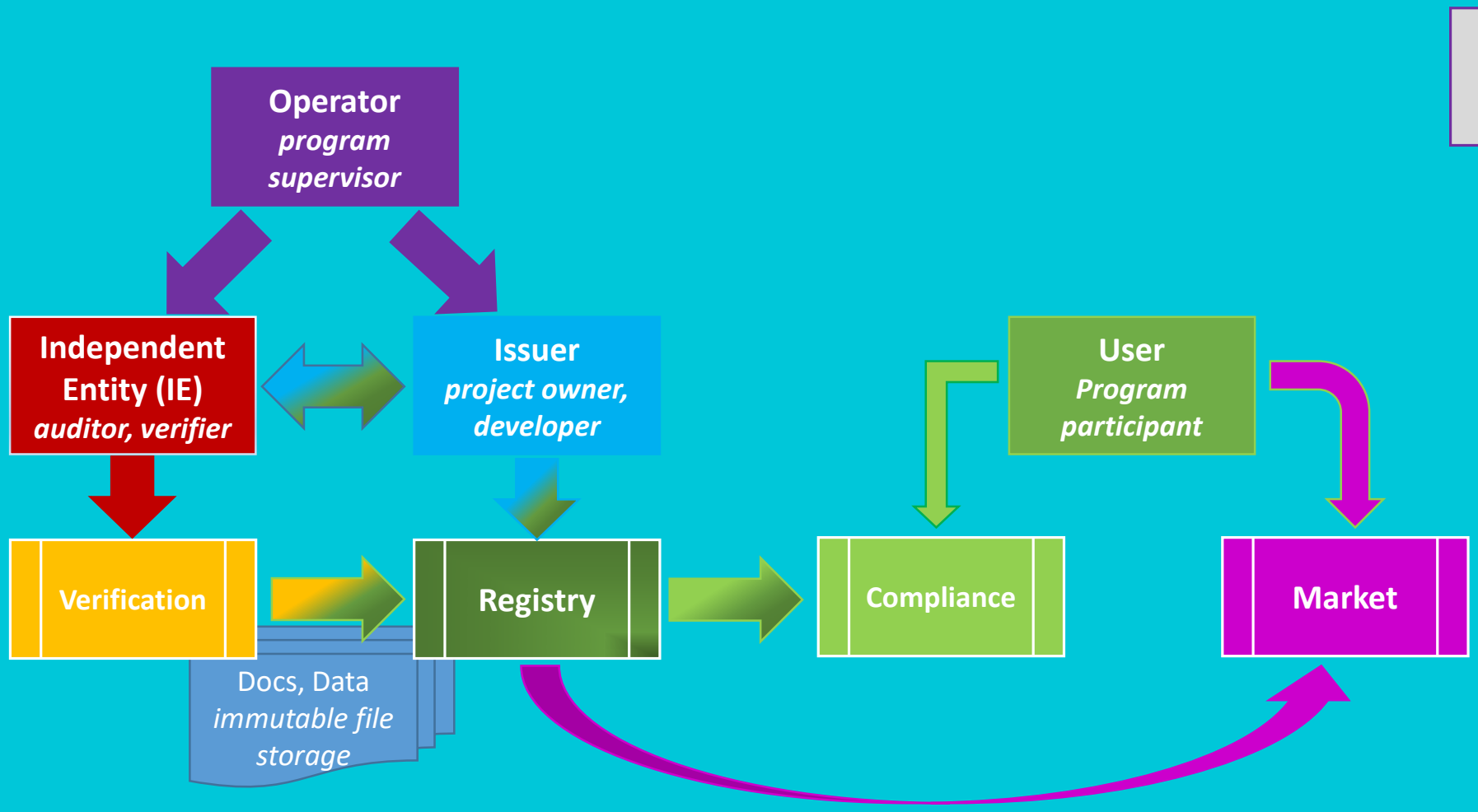
Climate policy

- *Cost-efficiency*
- *Information* integrity via pricing signal
- Transparency, preclusion of falsifications, double-counting
- *Fungibility* of mitigation instruments
- **Decentralized or distributed governance and inclusion**

Disintegration of market space, of the pricing signal would not allow for *global ambitions sufficient to achieve* the Paris Agreement target.

Public and programable blockchain for PA implementation *is to provide for drastic* enhancement of achievable ambitious targets.

DAO IPCI Peer-to-Peer Environmental Impact Programs' (EIP) Standard Structure

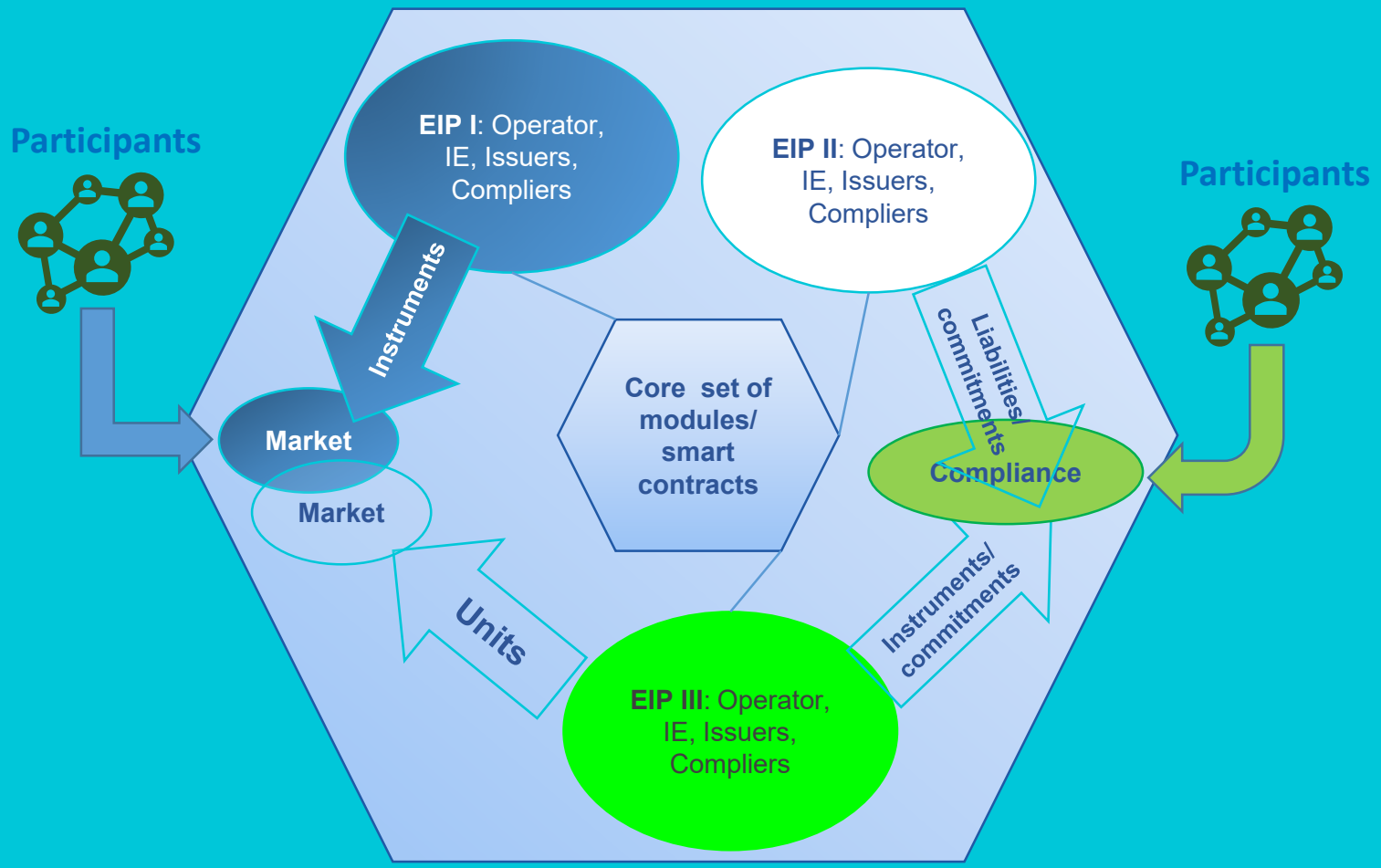


Set of open-sourced audited **Smart contracts**, operable and tested in actual transactions, allows **Agents** to:

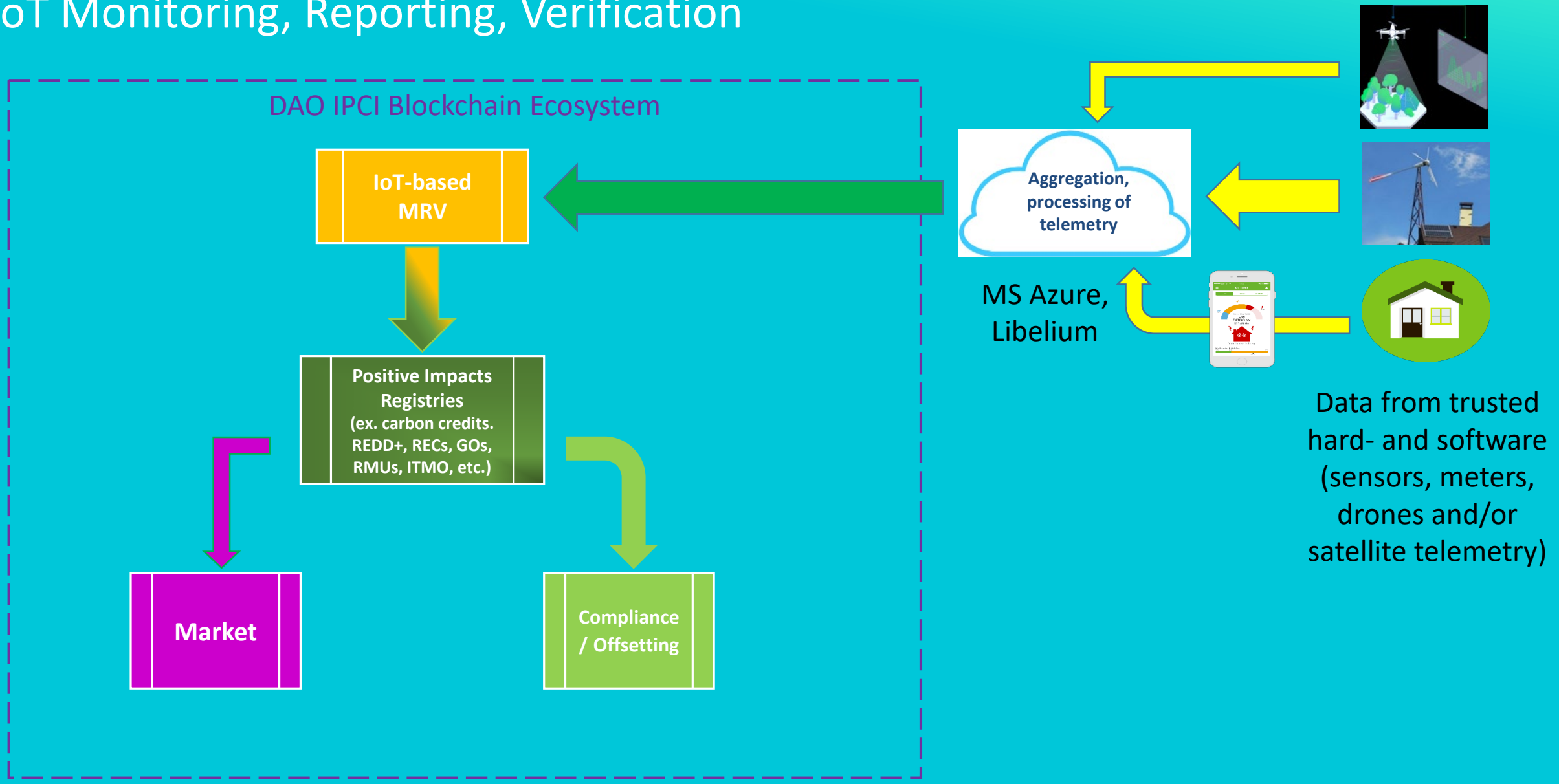
- To create registries for green assets and liabilities
- To verify and issue environmental units (e.g. credits, quotas, RECs, GOs, other mitigation instruments) justified by documentation and data in the immutable file storage
- To transfer, retire for offsetting or compliance purposes or trade green market instruments

DAO IPCI ARCHITECTONICS

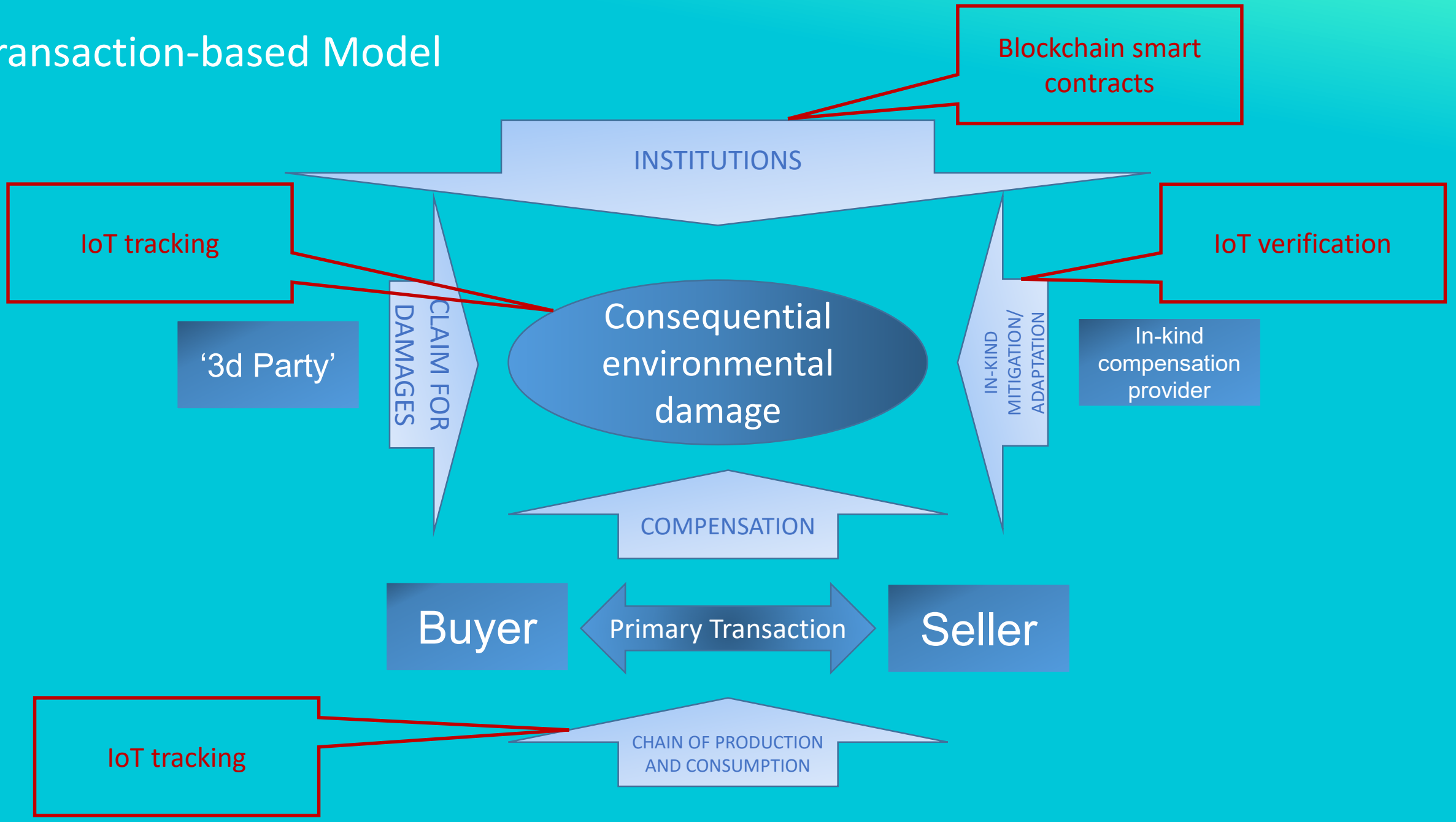
- Environmental Impact Programs (EIPs) form decentralized autonomous organizations (DAOs), use common set of adjustable and ready-to-use modules and smart contracts and can:
- Link,
- Merge,
- Share registries and markets, assets and liabilities



IoT Monitoring, Reporting, Verification



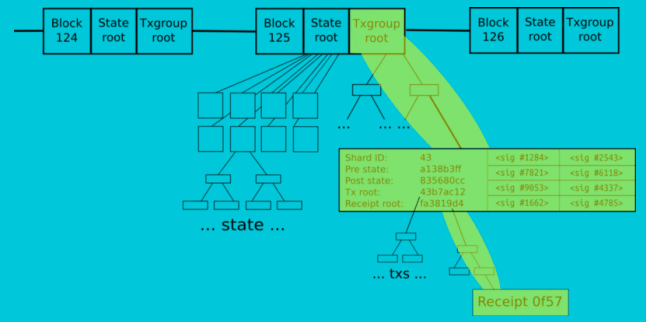
Transaction-based Model



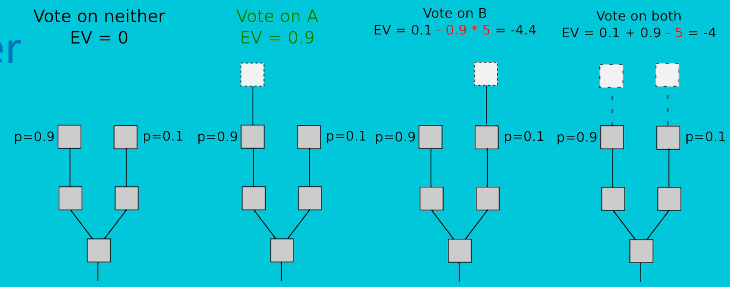
BLOCKCHAIN ISSUES, SOLUTIONS AND PROSPECTS

Solutions for such blockchain issues as **scalability, energy consumption, interoperability** are developed and under implementation, including cryptocurrencies' carbon footprint offsetting

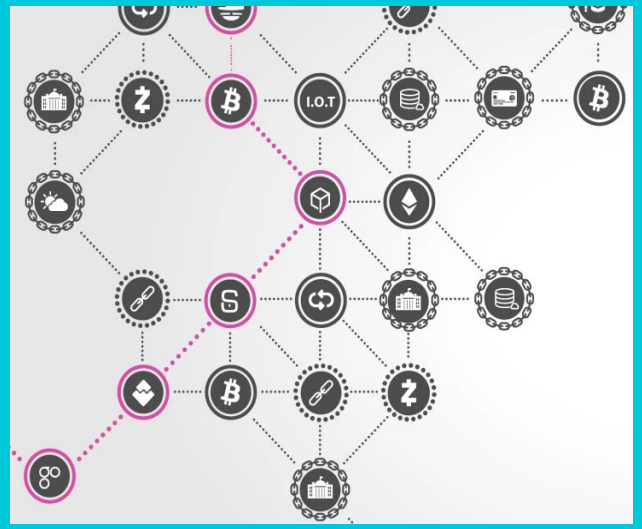
PLASMA SHARDING



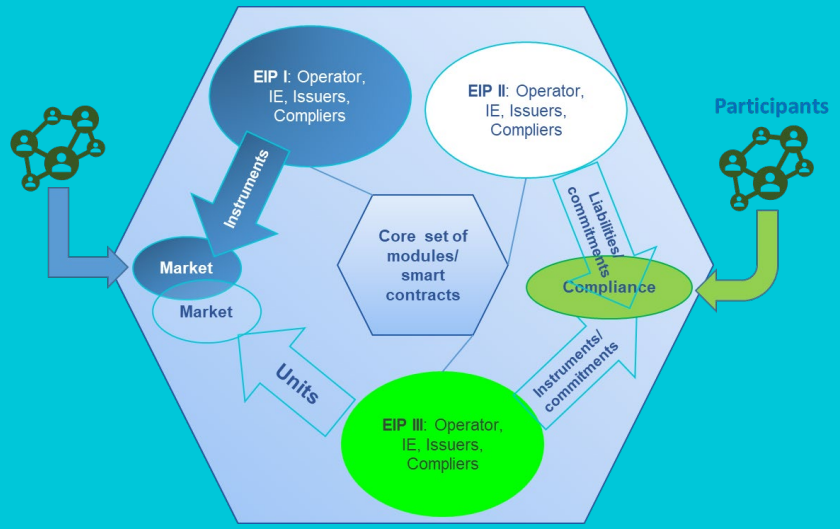
Casper PoS



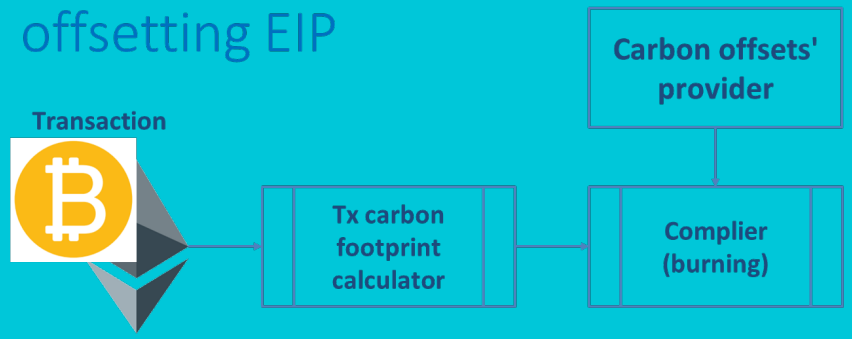
POLKADOT MULTICHAIN INTEROPERABILITY



DAO IPCI PROGRAMS' AND MARKETS' INTEROPERABILITY



Cryptocurrency carbon footprint offsetting EIP



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