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BABEL
Blockchains and Artificial
Intelligence for Business,
Economics and Law

BLOCKCHAIN

for the Energy Transition: Rule of Code versus Rule of Law?

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OUTLINE

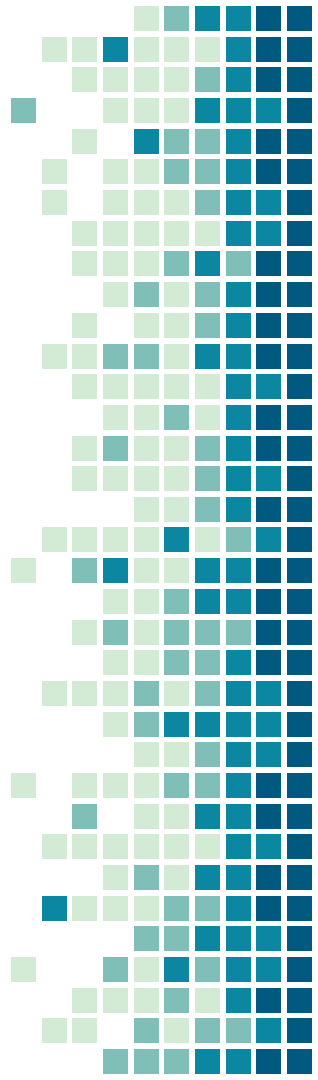
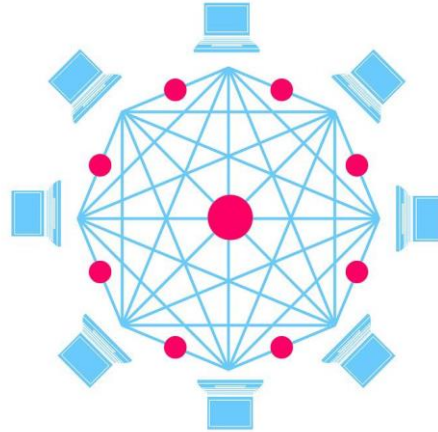
- Context
- Research Questions
- Regulatory failures
- Possible Blockchain applications
- Conclusions



Context

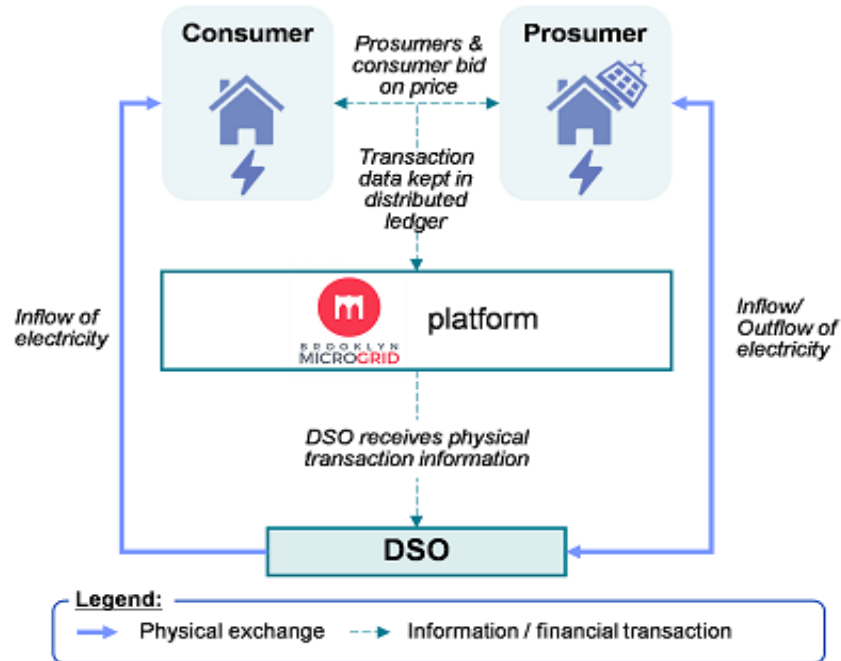
Three fundamental concepts

- **Blockchain:** a public, immutable, transparent distributed ledger
- **Smart contract:** a line of code that automatically execute a specific function once certain conditions are met, normally following the "if... then..." statement
- **Blockchain: is it always a good idea?**
decentralization is not a panacea



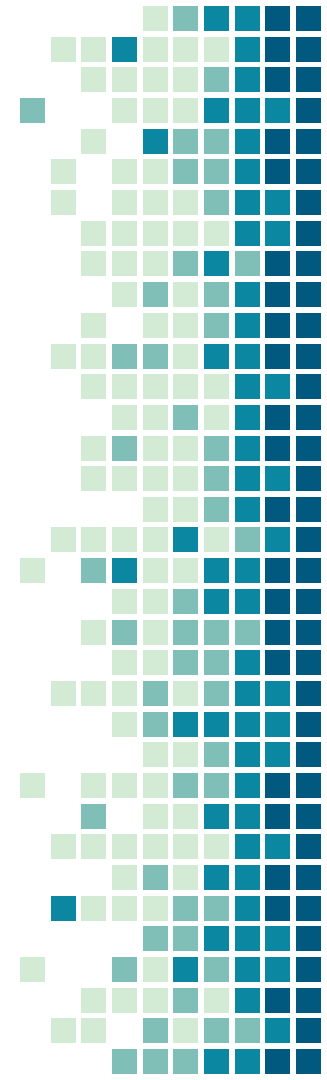
Peer to Peer trading

Mechanism of peer-to-peer retail platform



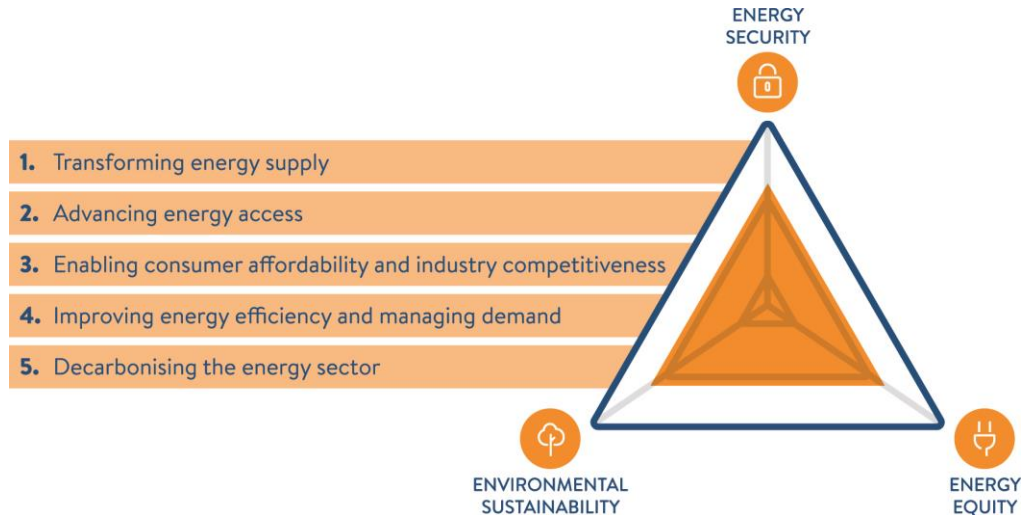
Research Questions

- How could Technology, in the form of Blockchain, affect Market Regulation?
- What are the possible interactions between Blockchain Code and Conventional Code?



Why do we (still) need to regulate the energy liberalized market?

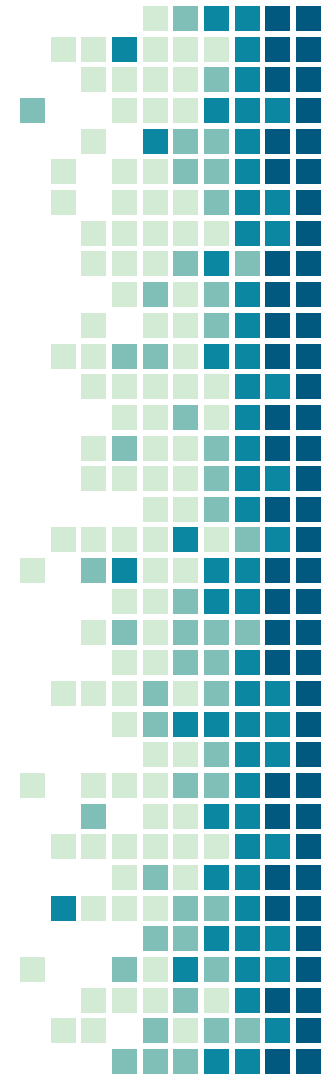
- **Market failures** (e.g., information asymmetries)
- **Energy Trilemma**



Source: World Economic Council, 2016

“Clean Energy for All Europeans”

- Key objectives: the “Four D”
 - Decarbonisation, Digitalisation, Decentralisation, Democratisation
- Consumer at the core
 - Active consumers
 - Generate, store, consume and sell electricity
 - Non-discriminatory access to the market
 - Passive consumers
 - Only consume electricity
 - Access to price comparison tools
 - Wide choice of payment methods



Possible interactions between Blockchain Code and Conventional Code

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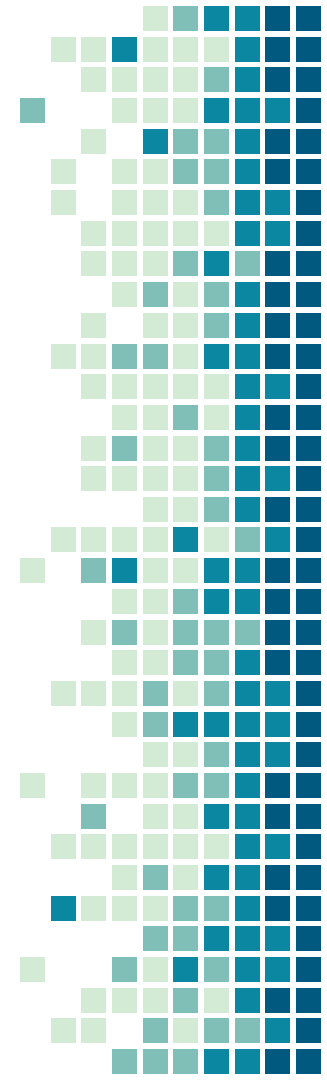
No. 2

Regulation by Blockchain: the Emerging Battle for
Supremacy between the Code *of* Law and Code *as* Law

Karen Yeung*

Table 1. Anticipated Form of Interaction between conventional law and blockchain code

Motives of blockchain participants vis-à-vis conventional law	Dynamic interaction (battle for supremacy?)
Hostile evasion	Cat and mouse
Supportive Alignment	The joys of (patriarchal) marriage
Alleviating Transactional Friction	Mutual suspicion and uneasy co-existence



Key targets for 2030

- At least 40% cuts in **greenhouse gas emissions** (from 1990 levels)
- At least 32% share for **renewable energy**
- At least 32.5% improvement in **energy efficiency**



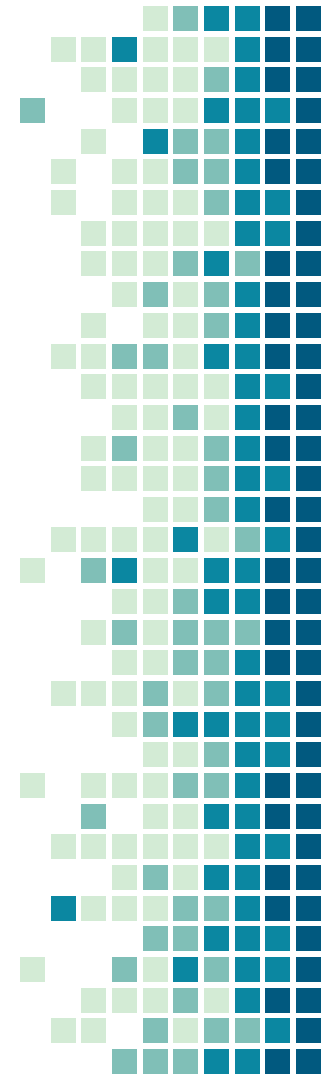
Some Critical Aspects

- Need to combine different legislation
- Market and regulatory failures
- Difficult coordination between contiguous policies
 - How do we the measure the share of renewable energy in the transport sector?
 - What is the public instrument provided by the legislator to incentivize the share of renewable electricity in transport sector?



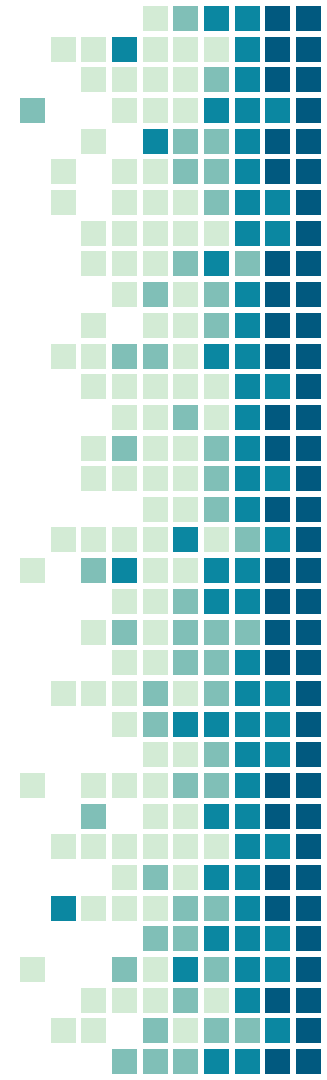
Possible Blockchain Applications

- **Main idea:** we can use the Blockchain not only to trace **already existing certificates** (like guarantees of origin and carbon emissions) but also to *replace the need* of this kind of certificates



Possible Conclusions

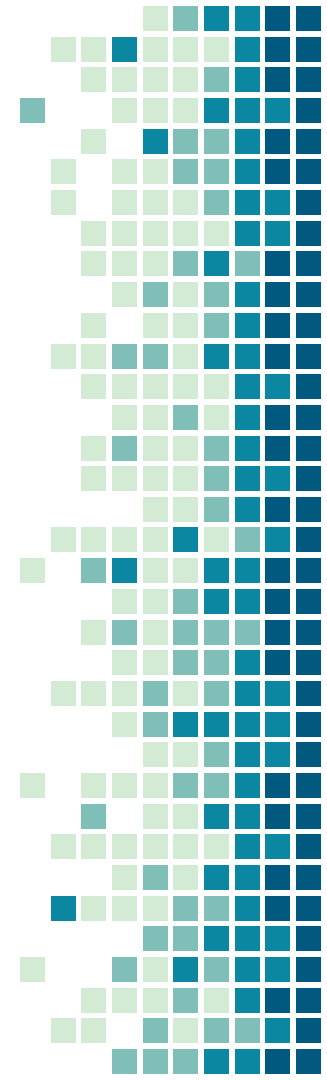
- SMART CONTRACT AS AN ENTRY POINT FOR REGULATORS
- Could P2P Trading also represent a form of efficient, harmonic cooperation between rule of code and rule of law?
- Could Blockchain represent a new equilibrium in the “State-Market pendulum”?



Peer To Peer Trading

A POSSIBLE REPLACEMENT OF EX ANTE REGULATION
and a new form of interaction between Rule of Code
and Rule of Law

- Peer-to-peer trading as a replacement of public subsidies
- Peer-to-peer trading as a replacement of carbon trading
- Peer-to-peer trading as a replacement of Guarantees of origin



THANKS!

Any questions?

