

Blockchain & opportunities is the energy market

8th Smart Grids Cleanpower Conference, Cambridge, UK

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19-20 June 2017

www.cir-strategy.com/events

...join the follow up 9th SGCP18 26-27 June Cambridge, UK



All change... mind the gap

The 2030 energy market requires a radically new approach



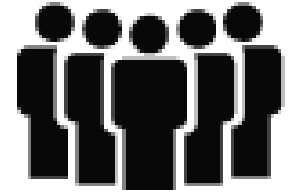
Now

14% distribution connected
Batteries <0.3W
EVs <150,000
5% balancing from DSR
6m smart meters
Early IoT appliances
DNO



2030

40% distribution connected
Batteries many GWs ++
EVs >5,000,000
50% balancing DSR
53m smart meters
Billions of IoT devices
DSO
Electric heating...?



What is blockchain?

A combination of technologies enabling efficient co-ordination without centralisation



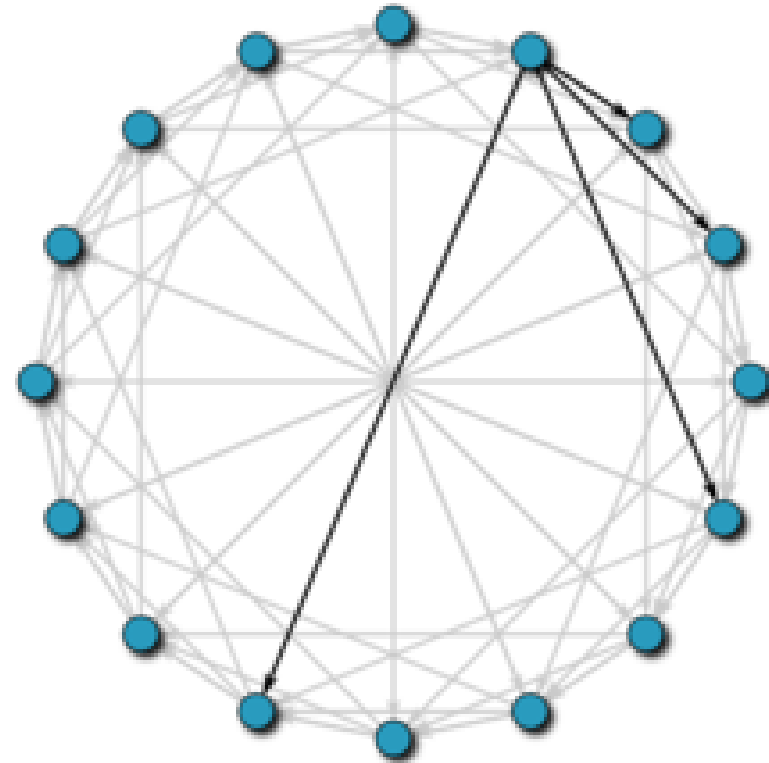
Transact w/o a privileged intermediary



Automate processes (smart contracts)



Coordinate and cooperate efficiently



What could it mean for energy?

Blockchain can create more inclusive, efficient markets and enable grid-edge coordination



Who can trade

- Level playing field
- Peer to Peer
- Machine to Machine



What is traded

- Value (tokens?)
- Data
- Micro-payments



Market structure

- No intermediary
- New collaboration models
- New value chains

An opportunity in market structure

Moving towards a marketplace for flexibility



National Grid: Future of Balancing Services, June 2017

“We need to create a marketplace for balancing that encourages new and existing providers, and all new technology types, and opens up competition on a level playing field.”

Clear focus on fixes for DSR sellers

- 1) Improves market information
- 2) Simplifies balancing services
- 3) Removes barriers for DERs
- 4) Improves other market mechanisms...

Outstanding issues for DSR buyers

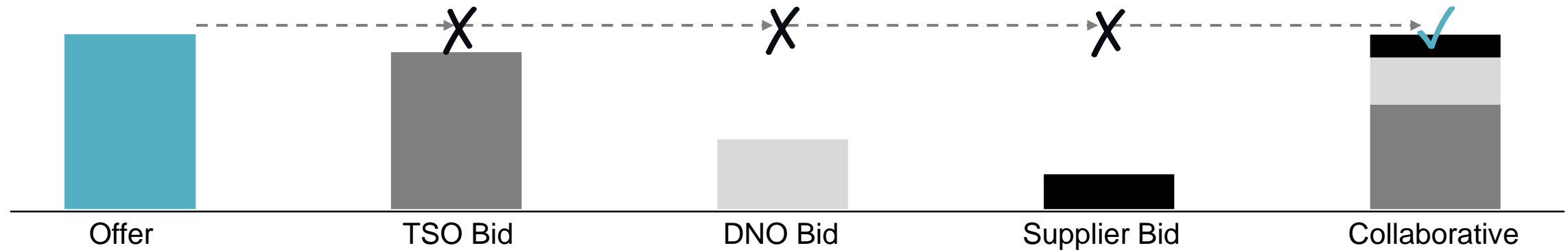
- 1) Liquidity fragmented across platforms
- 2) Need to value location of DSR actions
- 3) Potential conflicts/ **inability to trade collaboratively**

Collaboration is key

DSR can be non-rival so it requires a novel approach to aggregation and allocation of value

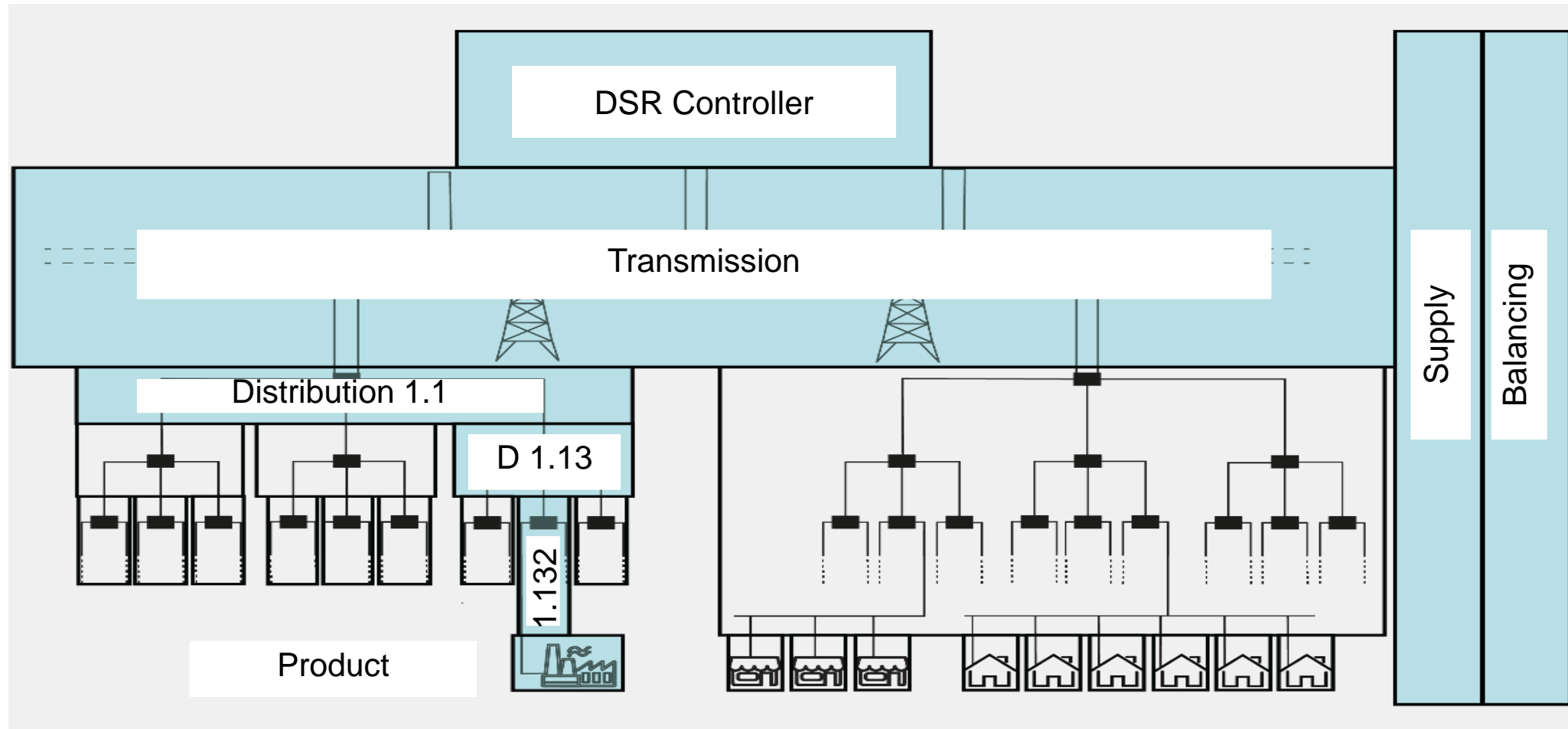
Collaborative trading can:

- **Unlock trades** that cant happen on a bilateral basis
- **Create cost savings** for flexibility purchasers
- Result in **more trades and more liquidity**



A collaborative approach

DR actions can be combined with delivery components & assembled into collaborative trades

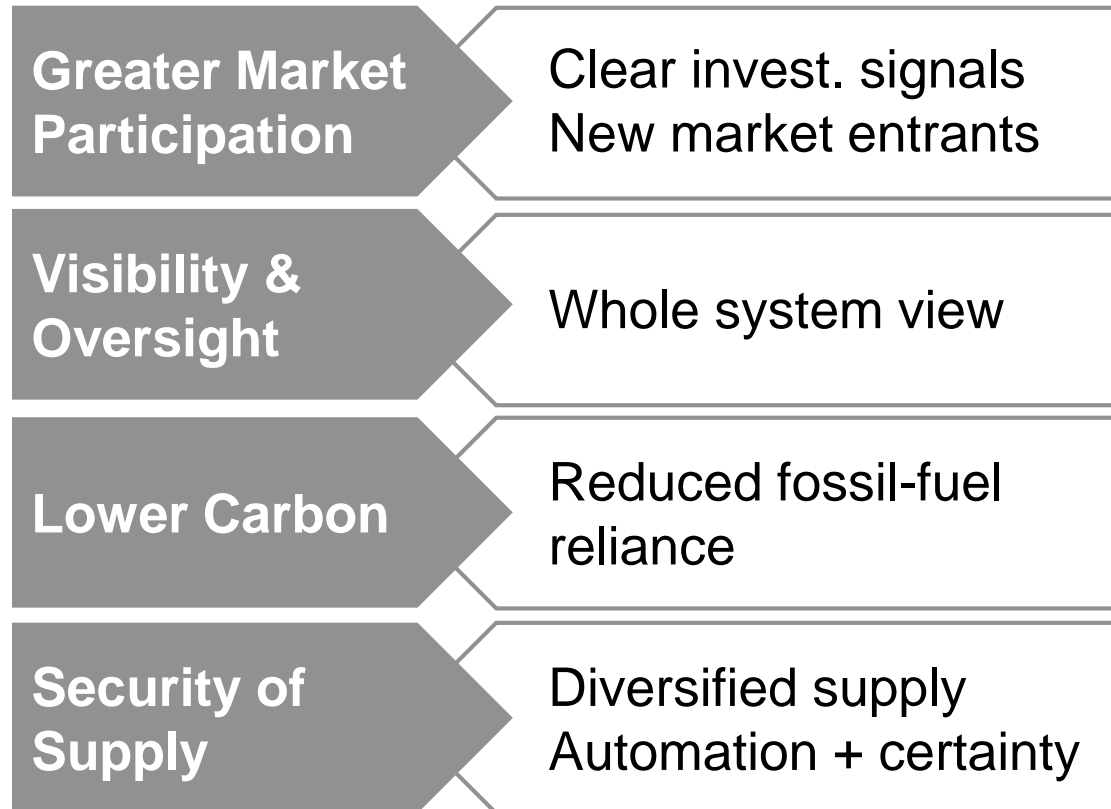


Key benefits of this approach

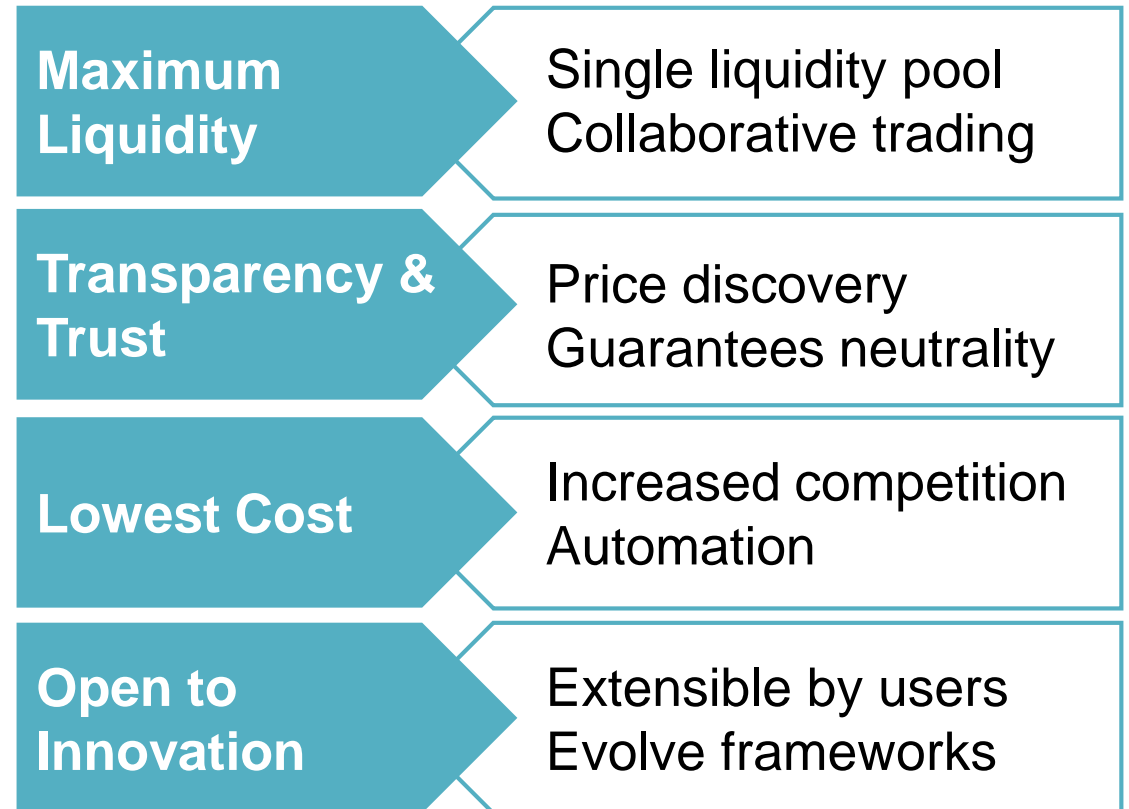
All parties pay less and deal more efficiently, ultimately lowering bills & carbon emissions



Market platform



Blockchain specific



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