

Paris Session  
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## CONTRIBUTION-5, Q5

# Blockchain and Sustainability

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## QUESTION-5:

Should sustainability be a built-in design feature of potentially scaled applications of blockchain technologies in energy markets (and/or more broadly)? How so?

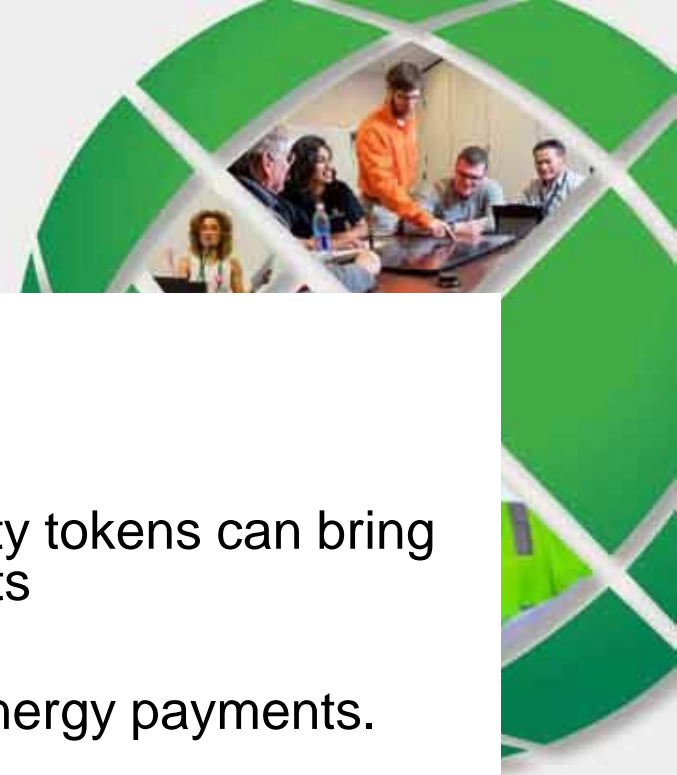


# Blockchain has two sides

1. Tragedy of the Commons is holding back sustainability efforts
  - individuals behave against the common good (i.e. sustainability) independently out of their own self-interest
  - Blockchain: Aligning Individual Incentives with Collective Group Incentives
2. Sustainability and Blockchain; Two sides
  - Allows efficient, novel processes which are not possible without blockchain
  - May consume significant energy resources in facilitating these processes
3. Novel processes
  - Can help sustainability in many ways
    - Management of Decentralised energy grids
    - Supply chain transparency
    - Facilitate EV finding charging stations so encouraging use of EV
    - Use of on demand drivers without a gig economy
    - facilitating peer-to-peer energy transactions



# More innovation and energy intensity concerns



1. Novel processes (contd)
  - Peer-To-Peer Investments for Sustainable Energy Infrastructure
    - as a Security Token Offering (STO) on the blockchain. Security tokens can bring much-needed immediate capital to sustainable energy projects
  - Direct Energy Payment Channels
    - Blockchain can be an entirely separate financial system for energy payments.
2. Significant energy resources
  - Excessive Energy use a recognised problem
    - Primary cause is extensive use of POW (especially Bitcoin)
  - Solution: Move from proof of work to proof of authority or proof of stake
    - Algorand claim transactions result in *120 million times less CO2 emissions* than Bitcoin
    - Red Belly New approach using concurrency from Australia claims 600,000tps

# Regulatory Impediments – Impact on sustainability

1. Regulatory bodies lack of understanding of blockchain
2. Bitcoin given blockchain a bad name
  - Volatile and risky
  - Very energy intensive
3. Status of smart contracts
  - Legal frameworks to handle these
4. Confusion over Public versus private networks



## Conclusion

Blockchain technology has significant potential to improve sustainability – the challenge is constructive progress in its use and reducing energy intensiveness

• **For further information see the Guide for Contributors** on Session [website](#) - *Group Discussion Meetings in the top menu bar*

- A contribution should answer only one question from the [Special Reports](#) – but you may propose several contributions.
- Time will be limited to about 3 minutes per contribution so 3 slides is a good target.
- Each contribution is **a visual support** (pptx file) **and a text version** (PDF format 1000 words maximum). Both will be included in the Session proceedings.
- Files must be uploaded in advance on your account on the **Registrations Portal** by **10<sup>th</sup> August at the latest**.
- They are checked by Study Committees before the Session. Visit regularly your account to see their remarks and notification.
- If needed you may attend the meeting with Study Committee Chair in Paris for a final check and speaking time setting – room and date to be announced on the website.

Thank you for your attention !