

Session - 7: Blockchain based Local Energy Community Governance

Speaker : Dharmendra Sharma, *Research Scientist, Technical Research Centre of Finland, VTT*

dharmendra.sharma@vtt.fi

Introduction

- We propose & develop:
 - Local Energy Community operation & governance by means of Decentralised Autonomous Organisation (DAO).
- So, what is DAO?
 - Basically, DAO is a just a governance smartcontract containing all immutable governance rules on blockchain. So, its an application of blockchain.
 - Transparent, Democratic, Member-owned communities without centralized leadership.
- Let's see:
 - how can we make such a governance DAO and use it for energy community operation?

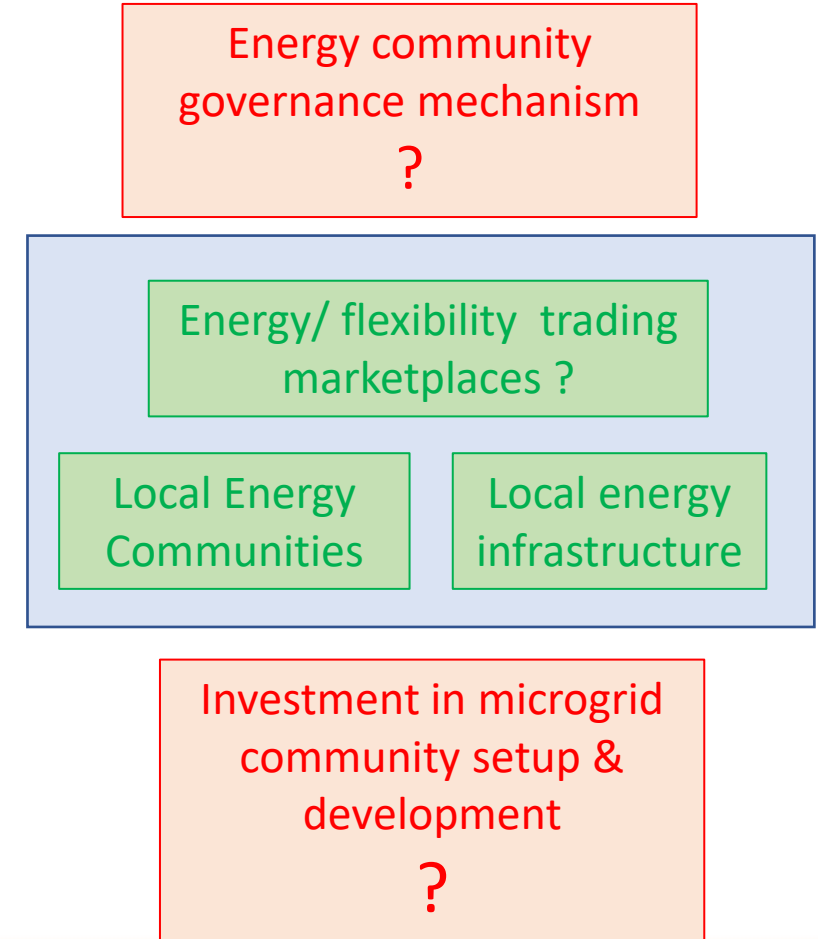
Context

- DAO is about how we manage communities and bring people together for a specific purpose.
- DAO has only 5 years of development history.
- DAO is basically like a co-operative but much less overhead costs and higher member experience.
- Our goal is to demonstrate local energy governance mechanism to help organise the people in energy community infrastructure, manage software, hardware, costs and services.
 - Members can deposit and lock funds in DAO smart-contract and there is voting for spending and also for distributions of earnings.
 - Members can bring proposals and there can be vote on any governance related question/conflict.
 - There can be voting for what to vote and what not to vote.
- Till now, smart-contracts are neither legal nor smart so we have see, as a technology, how it will evolve in future.

- Our experience is that It is **difficult to replicate microgrids** (positive energy districts) -> due to new stakeholders participants each time.
- Can DAO help us to replicate microgrid projects in multiple communities?
- The challenge is that till now
 - Reliable & secure mechanisms to bring funding in local energy systems missing?
 - Service mechanisms from community owned energy systems is missing. **For example:**
 - How can we have collective investment and ownership for community owned batteries? How can we horizontally replicate a system?
 - How can a community offer e-vehicle charging services from community owned charging station and local renewable generations.

Presentation on the Topic

- What can we possibly achieve using DAO based local energy governance:
 - Trusted, leaderless and democratic energy community governance mechanisms
 - Horizontally scaling of microgrid based energy communities
 - Faster replication of community level energy systems at large.
 - Enhance the community member experience and participation.




Use Case/Case Study

- EnergyDAO space is active.
- 23 members (some anonymous).
- Started in Jan 2022.


S



[< Back](#)
[Connect Using METAMASK](#)
[Connect](#)

 localenergydao Proposal In-Progress

Relevance of local EnergyDAO project

3/4/22, 6:59 AM 

Overview
Participants


Do you think if software based co-operatives (DAO) can be a solution for local energy com...

☐ #1 YES
Yes and I know a lot about this topic.

☐ #2 Yes
Yes and I know a little about this topic.

☐ #3 No
No and I know a lot about this topic.

☐ #4 No
No and I know a little about this topic.

 Log in to vote
In order to vote, you must login first.

Proposal Description

This proposal to take a vote if DAO can be solution to help replicate smart microgrid projects in multiple communities?

The challenge is that till now there is no reliable & secure mechanisms to bring funding in local energy systems. No well established governance mechanism for energy trading within and outside the local communities. Service mechanisms from community owned energy systems is missing.

VOTE NOW.

Current Results

Do you think if software based co-operatives (DAO) can be a solution for local energy community governance and can help replicate smart microgrid projects in multiple communities?

YES / 0%

Yes / 0%

No / 0%

No / 0%

Casted Votes

Voter	Date	Option
No data		

Proposal Info

Start Date	3/4/22, 7:05 AM
End Date	3/19/22, 6:49 AM
Voting Type	One Member One Vote
Total Weight	21



Key Takeaways

- Technically, Blockchain is just a **slow** database and power systems needs to be very **fast**. **So, we have to be very careful about overusing blockchain in power systems.**
- DAO's should be built on "decentralized enough" blockchain.
- We think that DAO can solve the **community wealth leak problem and help communities to be more prosper** and offer energy services efficiently.
- **Want to follow VTT's EnergyDAO project?**
 - Go to local EnergyDAO [webpage](#)
 - Create a metamask wallet and join DAO-space to follow the progress.
- Please send an email for white paper later.

IOTA based one-tier, double-auction
P2P-like **FLEXIBILITY** Market
<https://www.fleximarex.com/>



EnergyDAO community link

Thank You

dharmendra.sharma@vtt.fi
<https://twitter.com/LocalEnergyDAO>

<https://www.vttresearch.com/en/vtt-world/>

India Smart Grid Forum
CBIP Building, Malcha Marg,
Chanakyapuri,
Delhi-110021
Website: www.indiasmartgrid.org