

October 2023

## ESMAP & ISGF Event

**Powerledger**





**We solve  
the time problem**



**We solve  
the place problem**



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**Both are needed to get to  
24/7 renewable energy**



## Spatial grid problems around the world, for example north and south Germany.

This 11.1 billion Euro network project in Germany is not progressing well. A Local Energy Market approach could eliminate the need for it altogether.

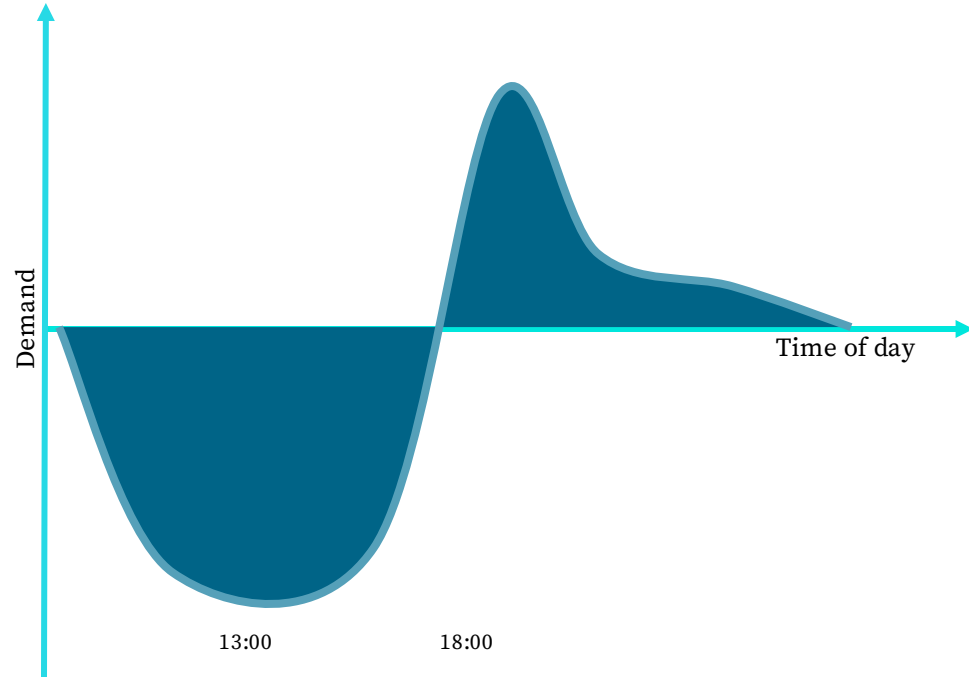




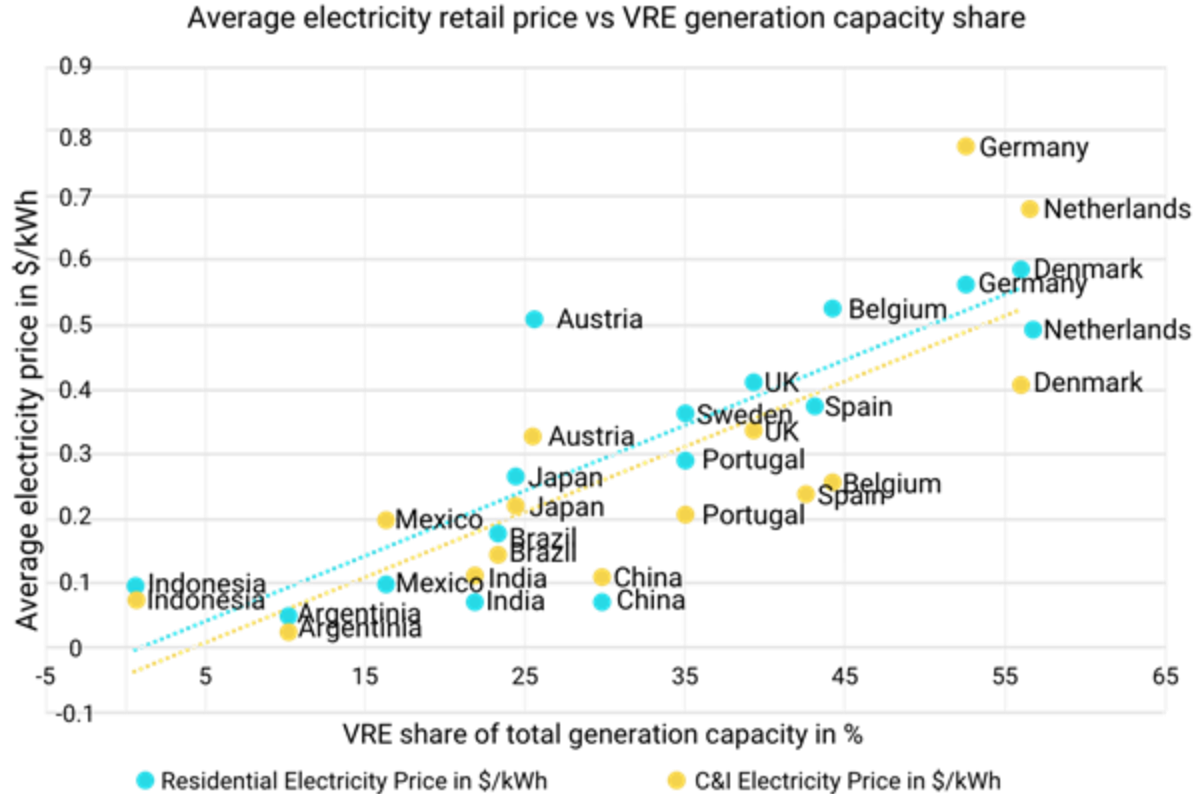
## Temporal grid problems, like the duck curve, are experienced every evening around the VRE world.

The world continues to produce a large surplus of electricity many hours before demanding that electricity in the evening.

An agile market supports loadshifting - which is much cheaper than using batteries. Our platform feature set address this issue head on.



# The consequence - retail electricity price trend upwards as VRE generation share increases

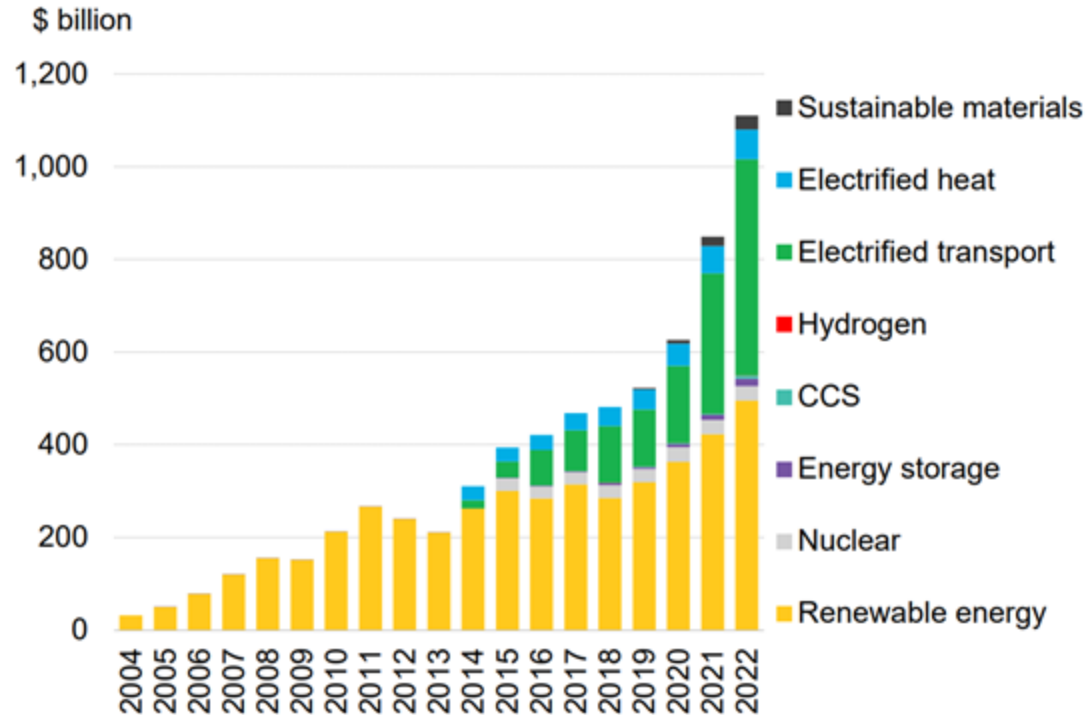




The global electricity, transmission and distribution market is expected to reach USD\$5.9 trillion in [2026](#).

Source: Research & Markets

## Global energy transition investment by sector

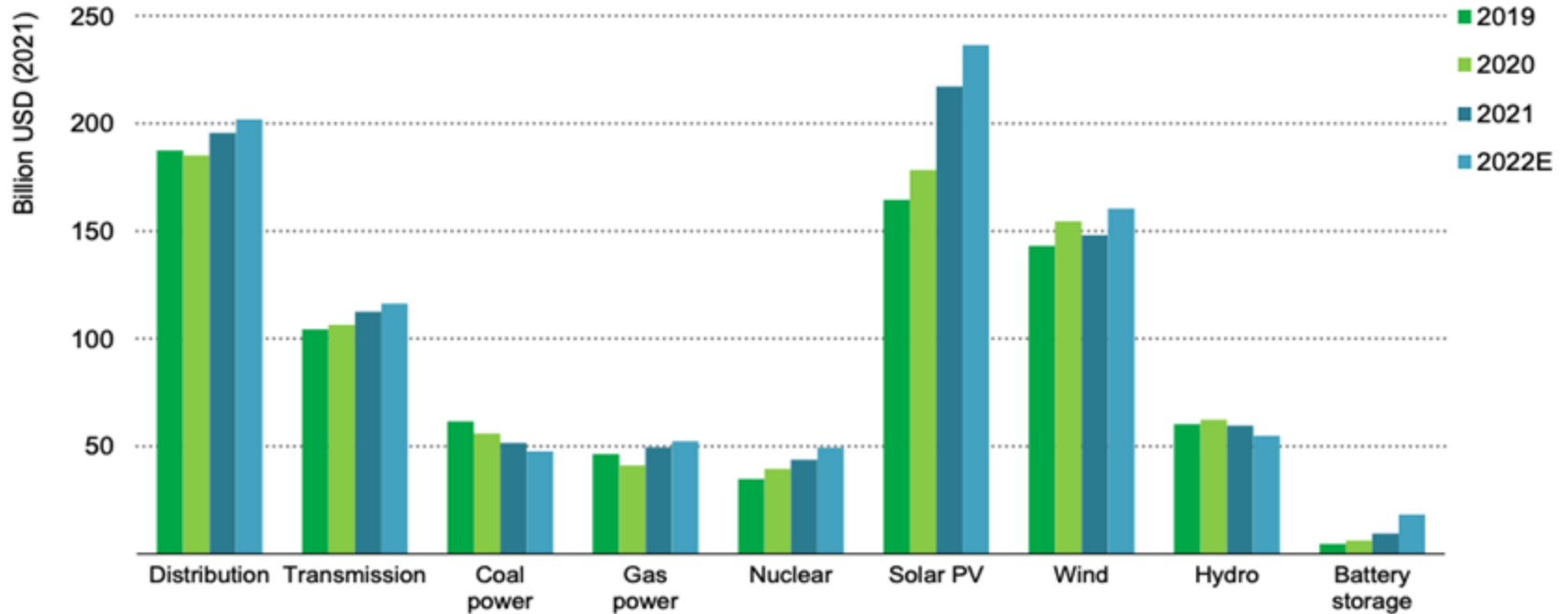


Source: BNEF

# Global energy investment: Network spend driven by renewable energy spend



Global annual investment in the power sector by technology, 2019-2022E



Source: IEA

# Powerledger's Platform



We believe the grid is only as good as the market that sits behind it.

Based on the tracking and tracing of energy, we spin up marketplaces for the trading of energy and for grid services.





## Choose Your Energy Mix, France

- A world first application of blockchain to do energy tracking and matching for 24/7 renewable energy.
- Customers can choose their energy mix, based on the type of renewable energy, location, time and type of the generation — from rooftop PV to large generation.
- The Platform tracks, traces and provide irrefutable transparency giving the customers control over the energy mix they buy.
- Customers joining this innovative retailer because of transparency and choice.
- To date there are 6,000 customers using the platform, with further scale up under discussion.





## Energie Steiermark, Energy Communities, Austria

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- Powerledger conducted an initial P2P trial and then an Energy Communities trial to help Energie Steiermark understand the commercial and business model of their offering.
- As a result of successfully completing these initial deployment, Powerledger has developed Energie Steiermark's Energy Communities product offering which is expected to launch in Q2 2023



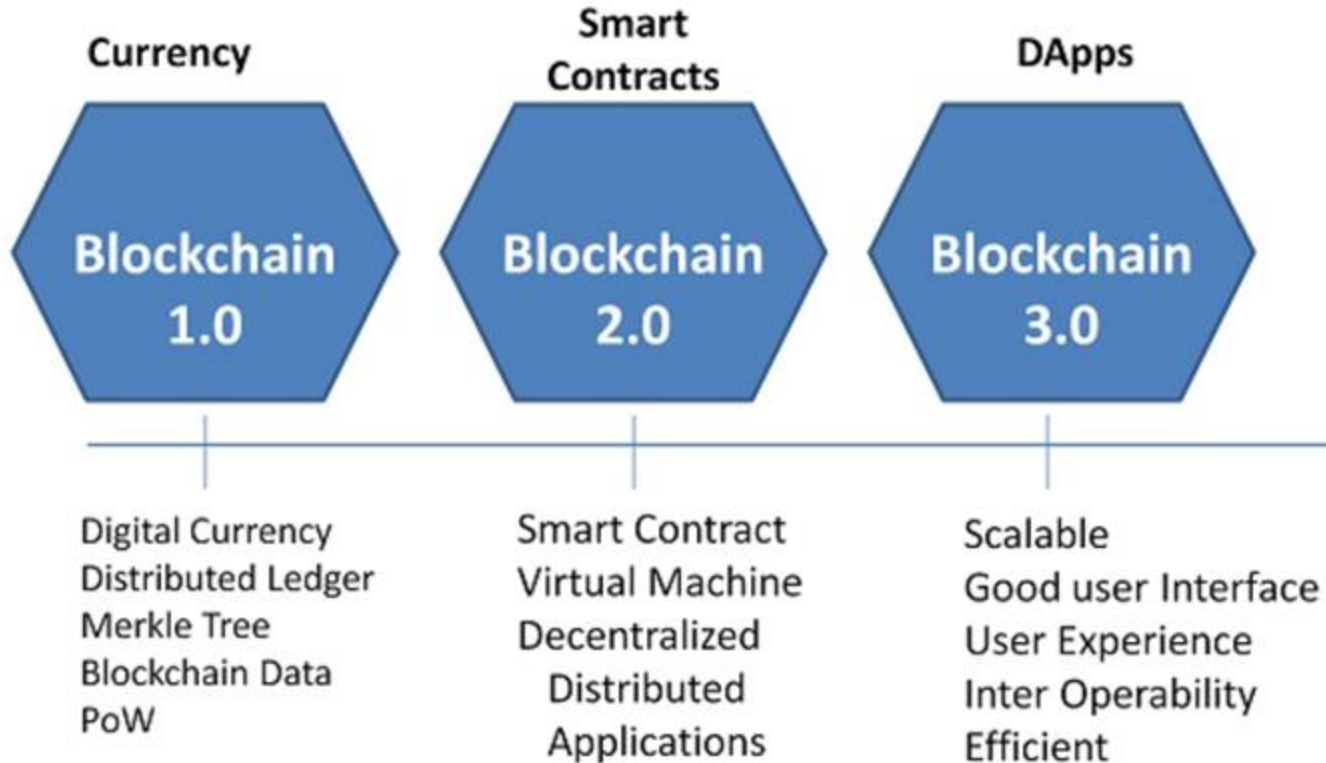


## T77 & O77 P2P Precinct Bangkok, Thailand

- The project began in 2018 as the largest commercial P2P energy trading project in the world. Initially, 700kW solar was being traded across six commercial, educational and residential sites.
- In 2021, O77 precinct, Hasu and Mori buildings were added: bringing project to 1.2MW in size in the marketplace.
- The success of this project led to the partnership between Powerledger & BCPG, which was just extended in Q1 2023 to end of 2025.








# Blockchain evolution from Gen 1.0 to Gen 3.0




# Optimizing 2nd Gen, Ethereum, w/ "3rd Gen" blockchains



|                                   |  |
|-----------------------------------|--|
| <b>Benchmark/<br/>Coins</b>       | <b>Ethereum</b><br> |
| <b>Transaction<br/>Throughput</b> | 15-30 tps  |
| <b>Transaction<br/>Fee</b>        | ~\$4 - \$21  |
| <b>Consensus<br/>Mechanism</b>    | Proof of<br>Stake  |

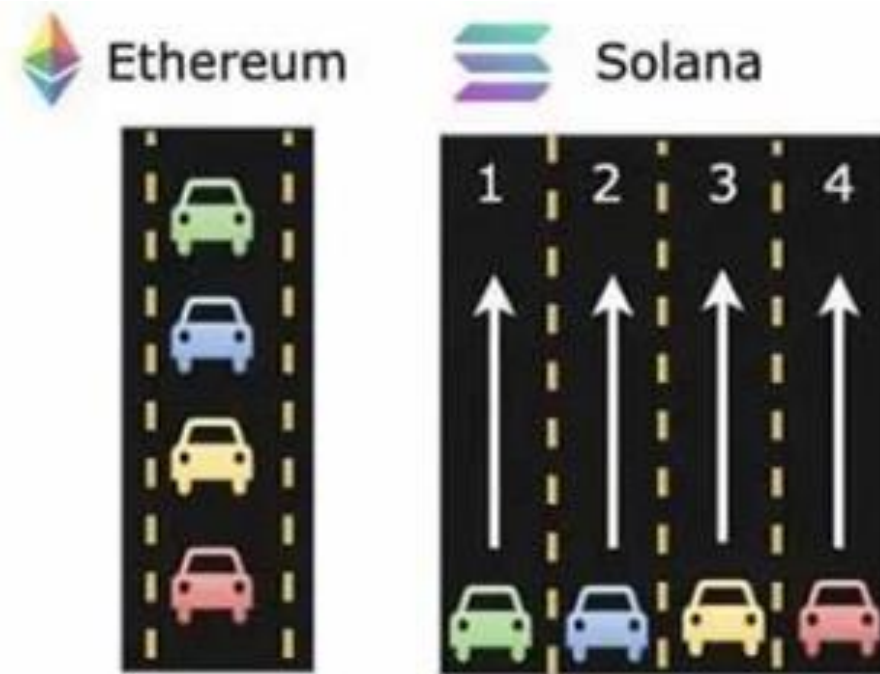
|  |   |  |  |
|--|---|--|--|
| <b>Cardano</b><br><br>CARDANO | <b>Avalanche</b><br> | <b>Polkadot</b><br> | <b>Algorand</b><br> |
| 250 tps  | 4,500 tps   | 1,000 tps  | 1,100 tps  |
| 0.4 ADA ~<br>\$0.77  | 0.001 AVAX<br>~ \$0.63  | 0.0157 DOT<br>~ \$0.64   | \$0.002  |
| Ouroboros<br>Proof of<br>Stake   | Proof of<br>Stake   | Nominated<br>Proof of<br>Stake   | Pure Proof<br>of Stake   |

|  |
|--|
| <b>Solana</b><br><br>SOLANA |
| 50,000 -<br>65,000 tps   |
| \$0.00025  |
| Proof of<br>Stake  |

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# How is Solana so fast?

## Parallel transaction processing

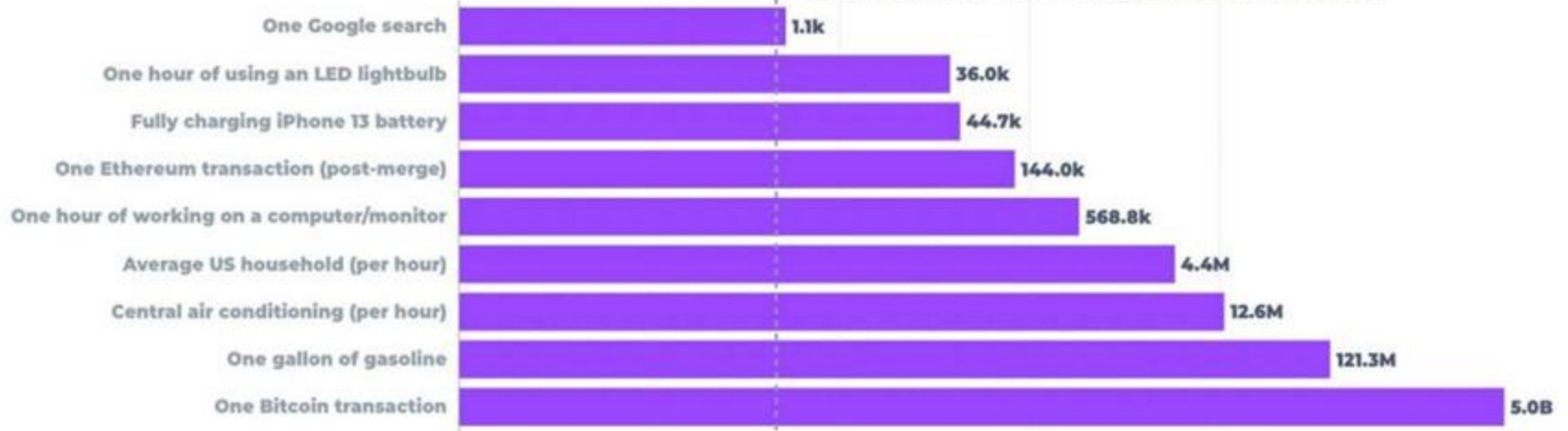


# Blockchain energy use, Solana, Bitcoin and other comparisons



## Comparative Scale of Solana Footprint

One Solana (voting + non-voting) transaction [0.878k J]



For reference: 1kWh = 3.6 million Joules

# Powerledger Blockchain, based on Solana



**In March 2022** - Powerledger launched its Proof of Stake Blockchain

**In August 2023** - Powerledger Blockchain, became **public**.

It is fast, energy efficient and low cost,  
designed for the energy use case

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