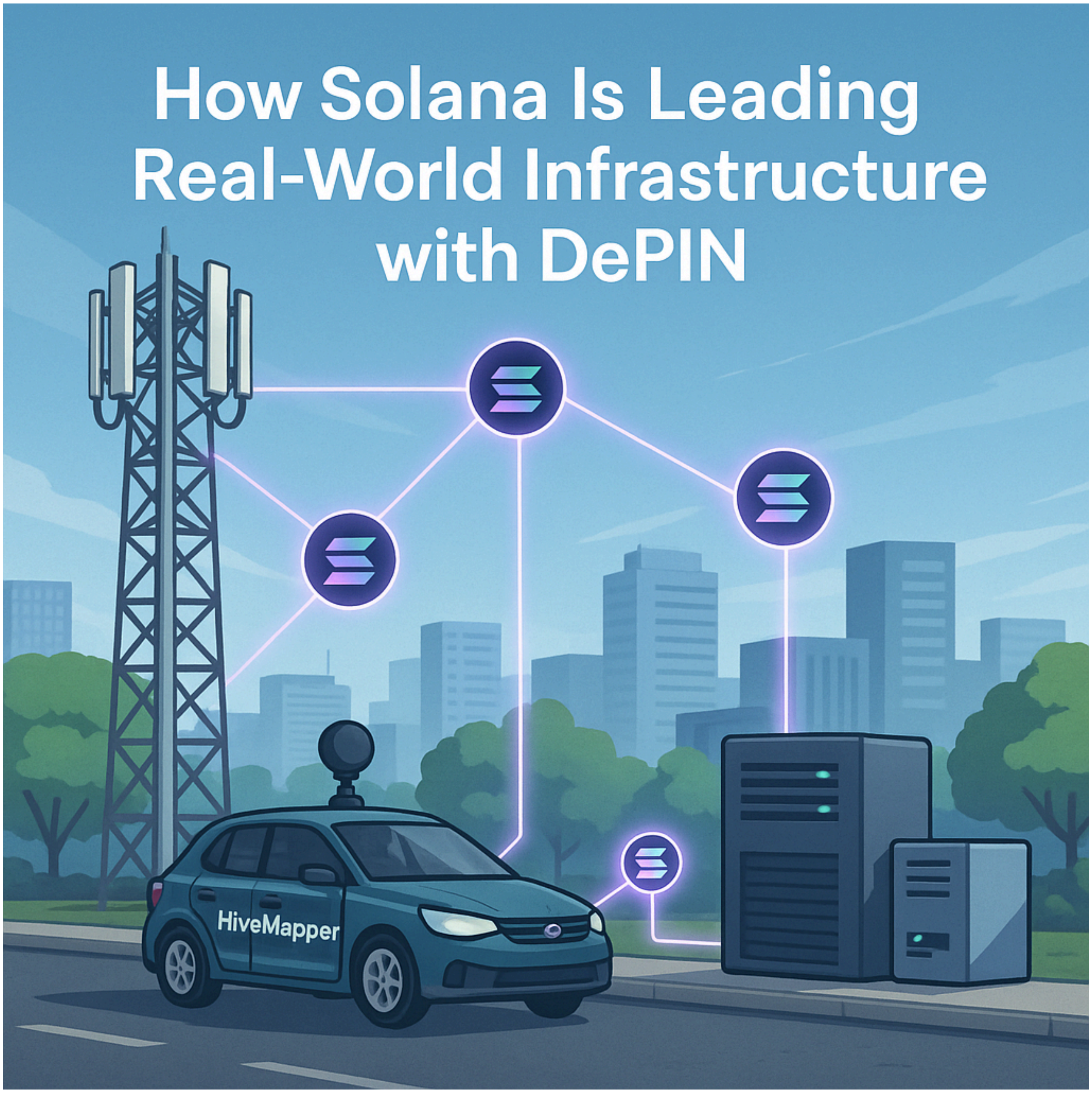
How Solana Is Leading Real-World Infrastructure with DePIN



Since 2022, Solana has been the go-to hub for DePIN projects, with a market cap boasting over $4 billion, surpassing Ethereum and Peaq, as the leading DePIN platform according to DePIN Hub.

Contributing over **10.87%** of market share of the total **36.8 billion** of DePIN market capitalization according to CoinMarketCap data on **July 23, 2025**

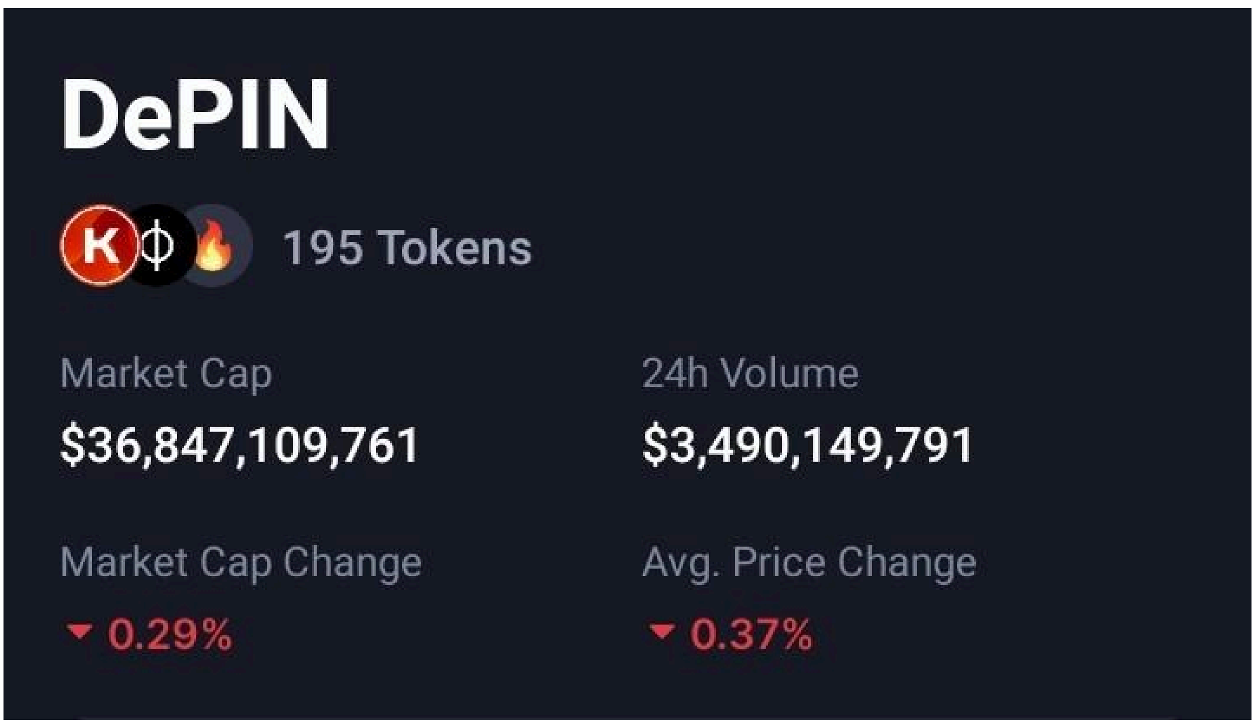
Backed by lightning-fast transactions and low fees, Solana offers exactly what DePIN builders need, making it the network of choice for scaling decentralized infrastructure built for real people, not just protocols.

This article explores how Solana is leading DePIN, the real projects and infrastructure driving it, and the growing community behind them, making this shift hard to ignore.

What is DePIN?

DePIN (Decentralized Physical Infrastructure Networks) connects blockchain with real-world infrastructure like WiFi, cloud servers, and maps.

As of now, DePIN is valued at $36.8 billion.



Messari estimates it could grow to $3.5 trillion by 2028. CoinMarketCap lists over 195 tokens in this category.

Instead of relying on centralized providers, DePIN networks are run by individuals who set up physical hardware, routers, sensors, data centers, and earn tokens in return.

A DePIN system includes:

Hardware: The physical infrastructure

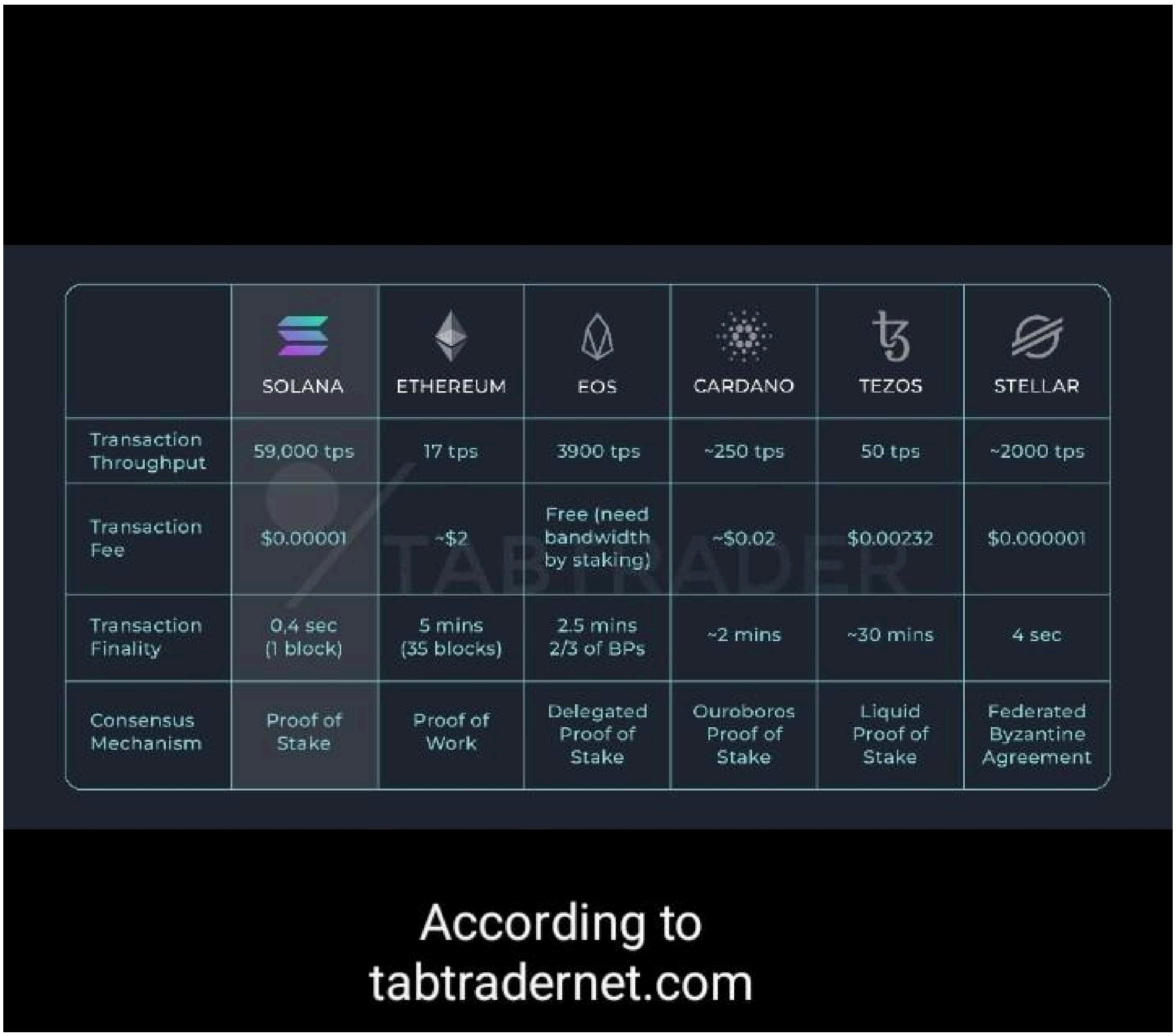
Contributors: People who maintain it

Tokens: Rewards for participation

Users: Those who use the services

By tying physical tools to blockchain rewards, DePIN brings crypto into real-world systems like connectivity, data sharing, and infrastructure.

Why Solana Is Built for DePIN



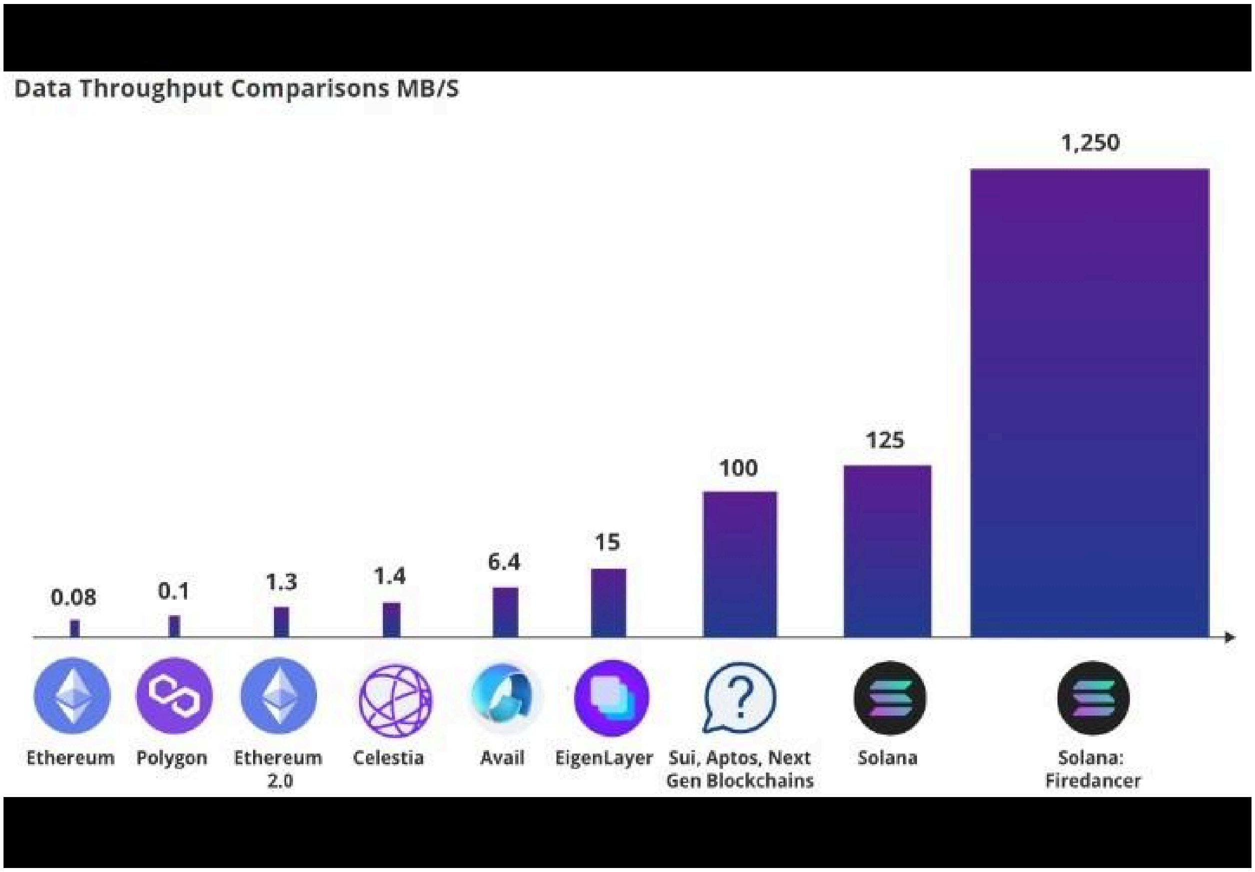
	SOLANA	ETHEREUM	EOS	CARDANO	TEZOS	STELLAR
Transaction Throughput	59,000 tps	17 tps	3900 tps	~250 tps	50 tps	~2000 tps
Transaction Fee	$0.00001	~$2	Free (need bandwidth by staking)	~$0.02	$0.00232	$0.000001
Transaction Finality	0,4 sec (1 block)	5 mins (35 blocks)	2.5 mins 2/3 of BPs	~2 mins	~30 mins	4 sec
Consensus Mechanism	Proof of Stake	Proof of Work	Delegated Proof of Stake	Ouroboros Proof of Stake	Liquid Proof of Stake	Federated Byzantine Agreement

According to tabtradernet.com

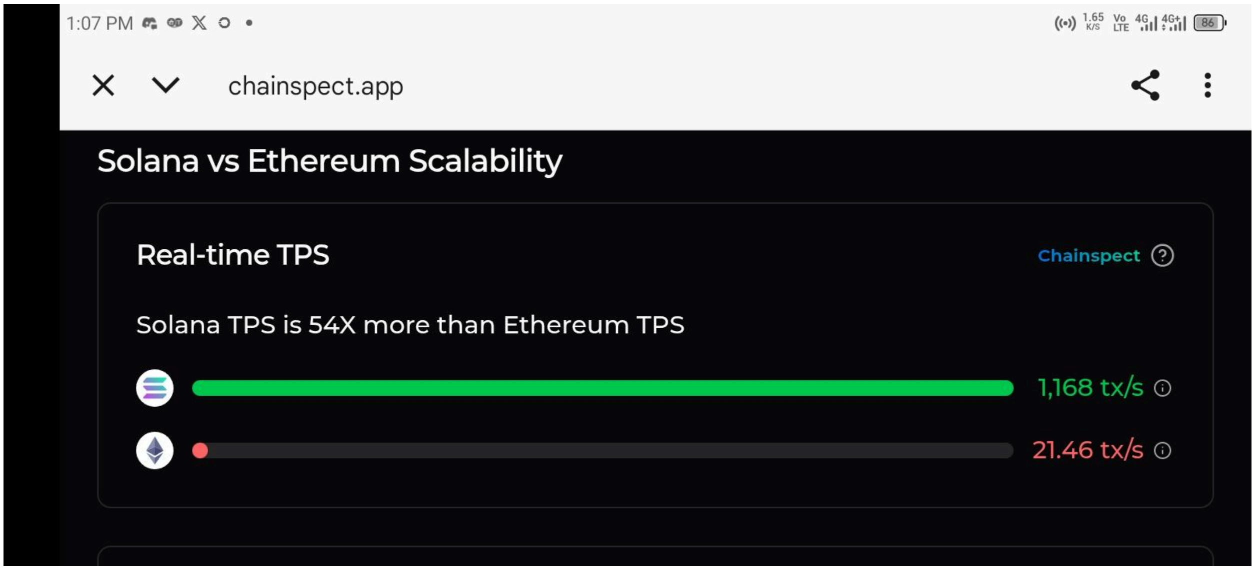
Solana stands out as the ideal foundation for Decentralized Physical Infrastructure Networks (DePIN), thanks to its unmatched performance, cost-efficiency, and growing ecosystem. It provides the technical edge needed to power real-world decentralized infrastructure at scale.

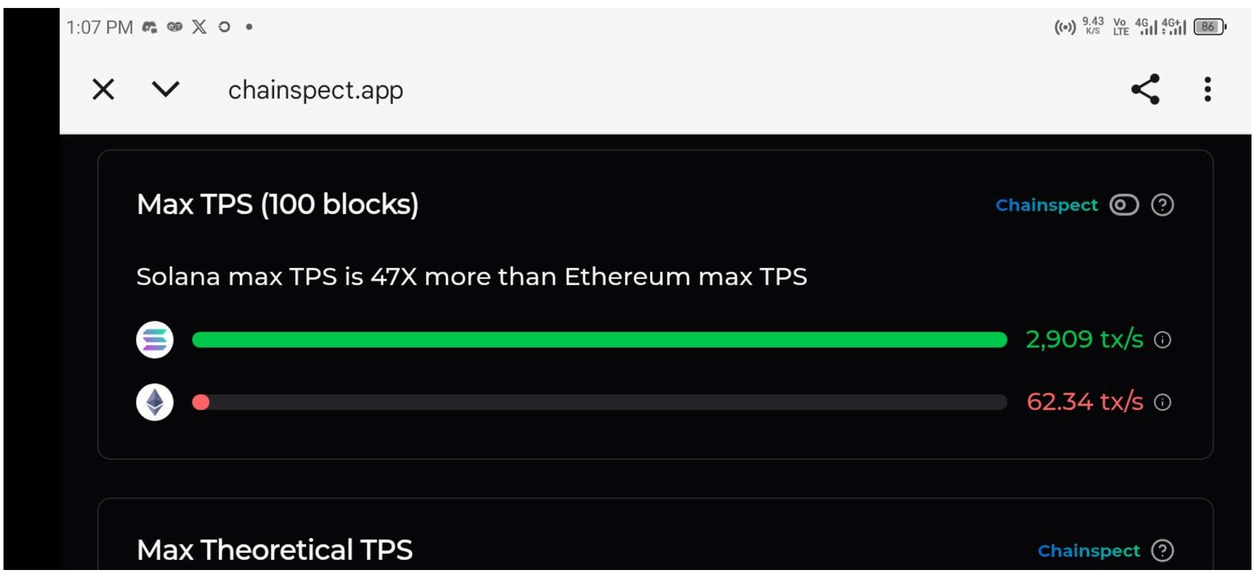
Why This Matters

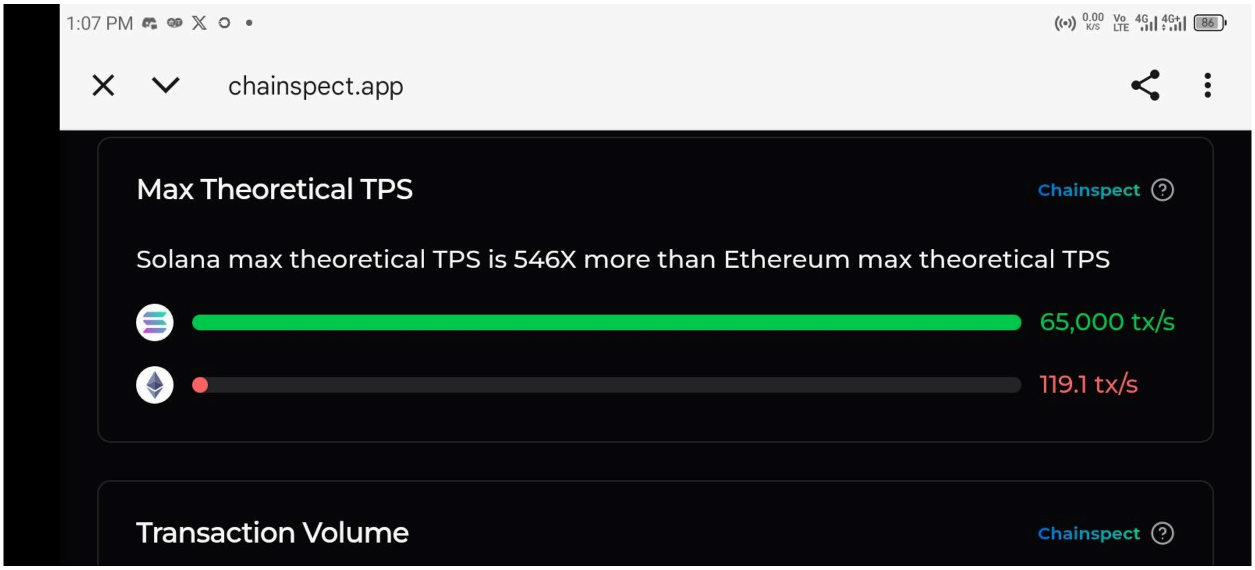
High Throughput, Low Fees: Solana handles microtransactions at scale, ideal for use cases like rewarding drivers, hotspots, or IoT sensors.

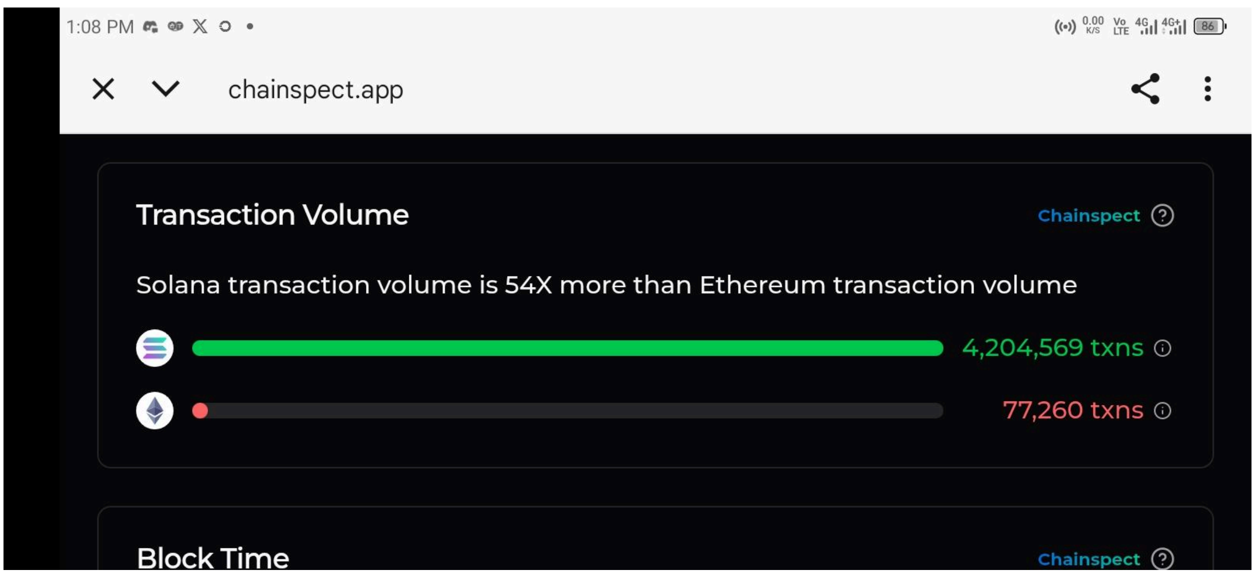


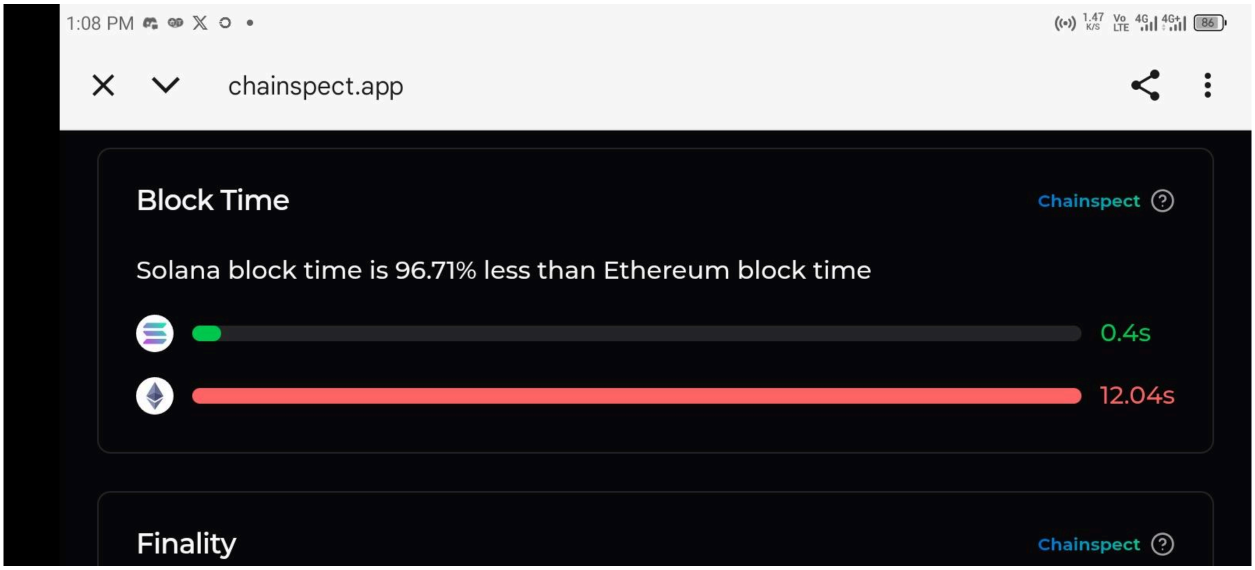
Scalable Infrastructure: As networks grow, Solana's architecture ensures they won't slow down or become cost-prohibitive.

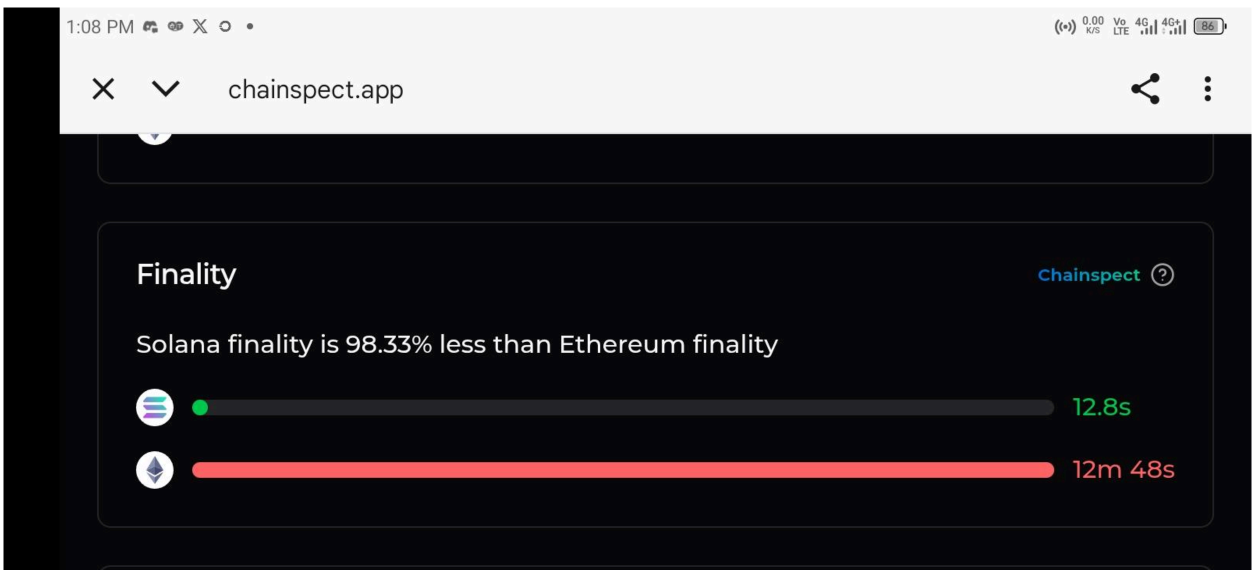


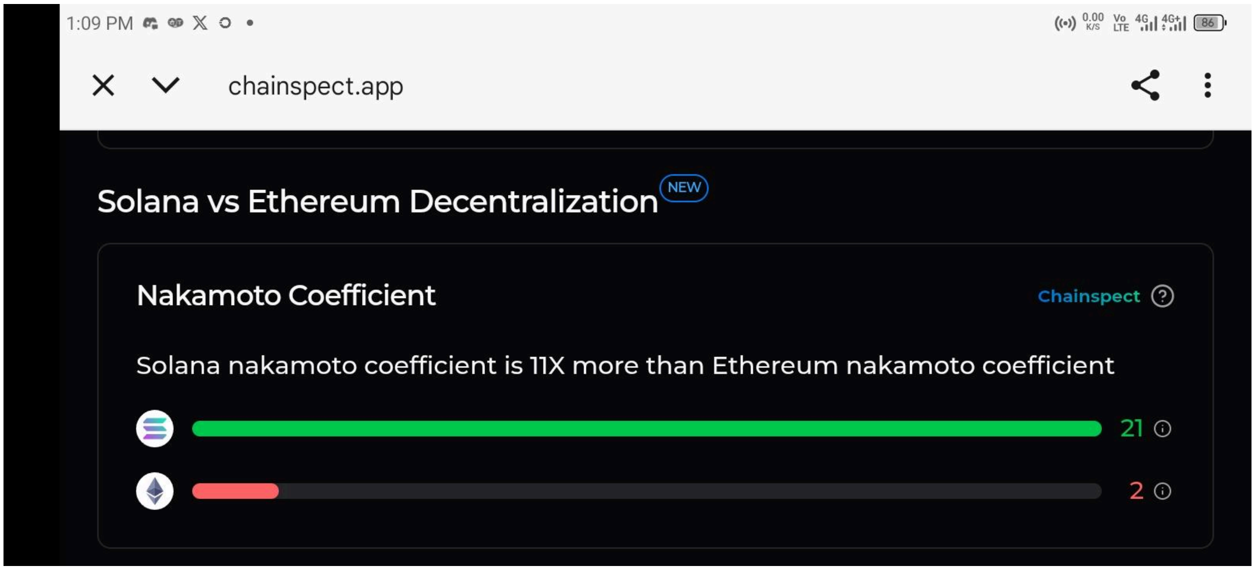



1:07 PM
chainspect.app
Max Theoretical TPS
Chainspect
Solana max theoretical TPS is 546X more than Ethereum max theoretical TPS
65,000 tx/s
119.1 tx/s
Transaction Volume
Chainspect

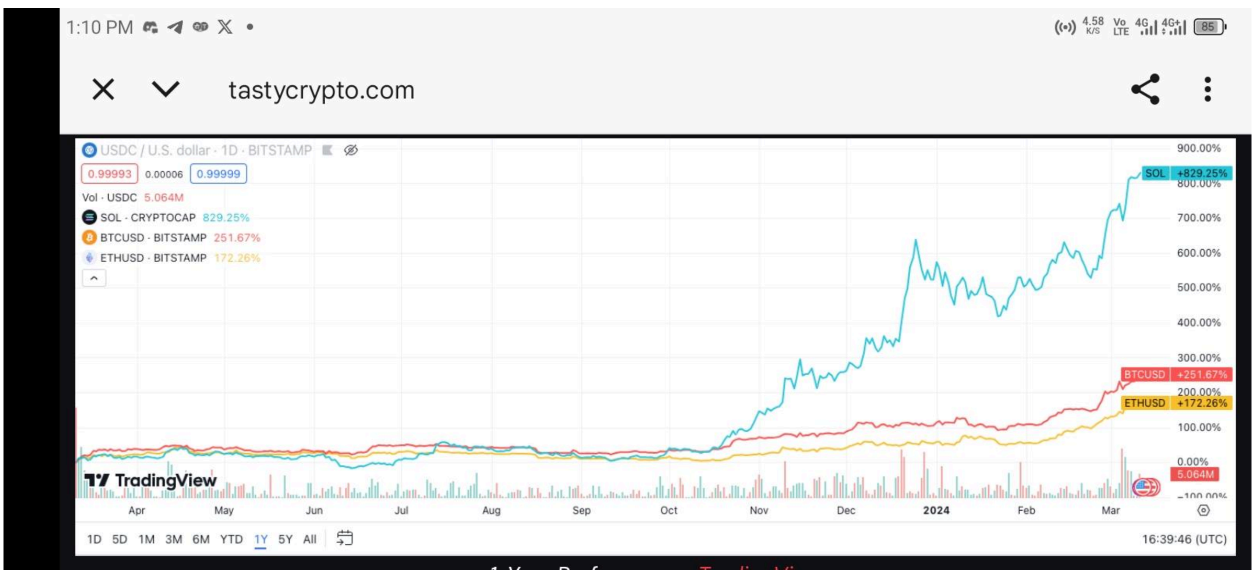

1:08 PM
chainspect.app
Transaction Volume
Chainspect
Solana transaction volume is 54X more than Ethereum transaction volume
4,204,569 txns
77,260 txns
Block Time
Chainspect


1:08 PM
chainspect.app
Block Time
Chainspect
Solana block time is 96.71% less than Ethereum block time
0.4s
12.04s
Finality
Chainspect


1:08 PM
chainspect.app
Finality
Chainspect
Solana finality is 98.33% less than Ethereum finality
12.8s
12m 48s



Ecosystem Momentum: With projects like Helium migrating to Solana, more DePIN builders are following, benefiting from shared tools and infrastructure.



Mobile-Ready: Solana Mobile opens doors for consumer-facing DePIN apps, bringing DePIN closer to mass adoption.

[redacted]

	TXN Finality Time	Average Gas Fee per TXN	# of Validators	# of Active Devs	# of DApps
SOLANA	5 seconds	$0.0221	1,576	2500	308
ethereum	15 minutes	$8.93	1,049,295	5700	4715

All Prices in USD

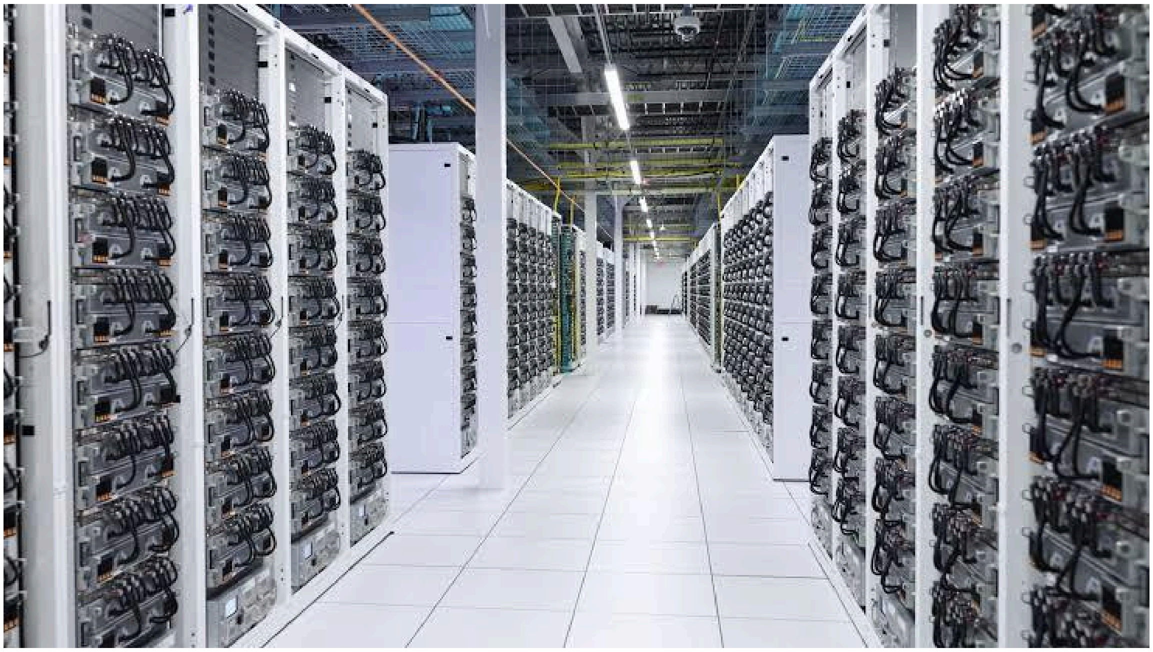
[redacted]

Top 3 Most Popular DePIN Projects on Solana Today

Note: *Below are the top 3 most popular DePIN Projects on Solana Today.*

Render Network

Founded in 2017 by Julius Obakeng, Render Network helps 3D creators, developers, and artists tap into unused GPU power worldwide.



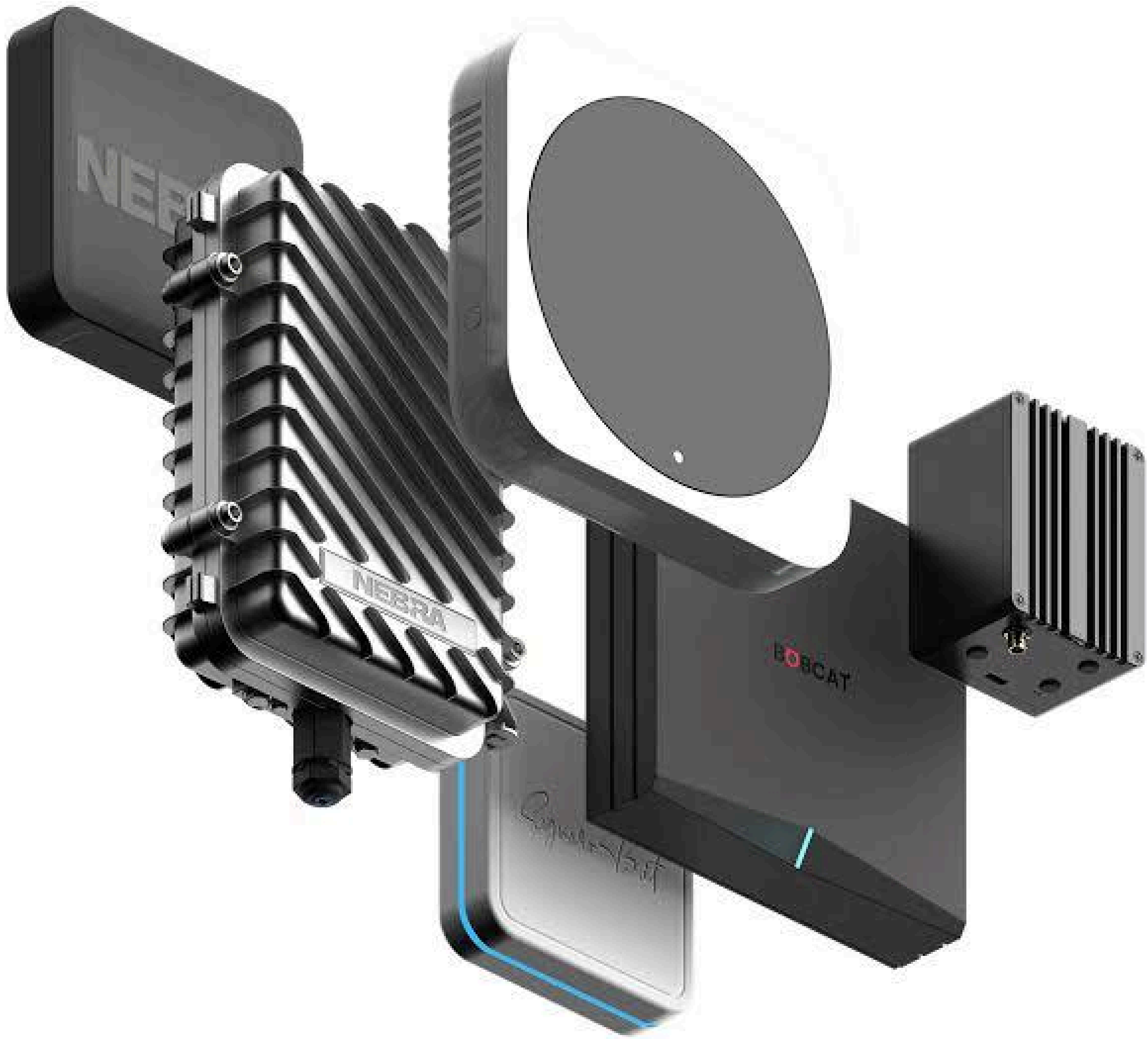
Instead of relying on expensive, centralized render farms, users pay with RNDR tokens, rewarding providers based on how complex the job is.

In 2023, Render officially migrated from Ethereum to Solana, announced at Breakpoint 2022. The move was driven by Solana's low fees, fast execution, and scalability, making it a more reliable chain for high-volume rendering tasks.

The migration improved cost-efficiency and throughput while positioning Solana as a serious backbone for compute-heavy DePIN infrastructure.

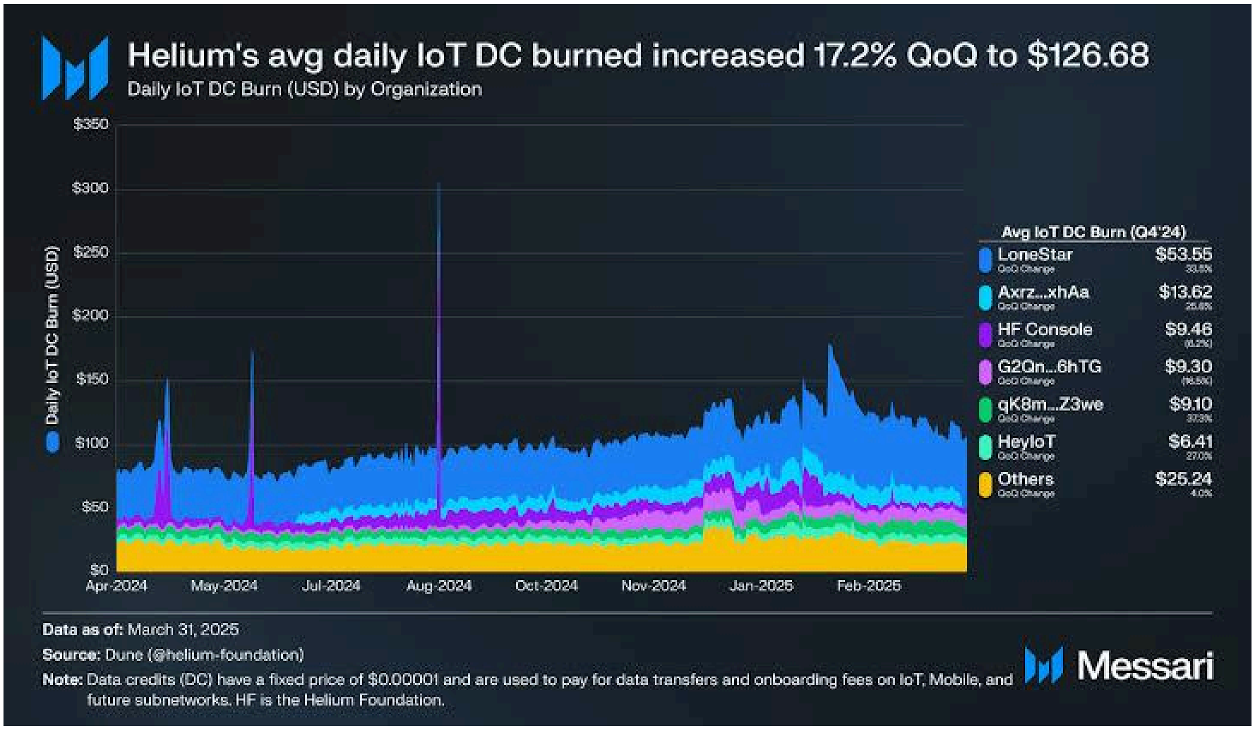
Today, Render **$RNDR** is valued at over $2.23 billion market cap, trading at an average price of $4.30, on July 23, 2025, cementing its place as one of the most valuable DePIN projects in the space.

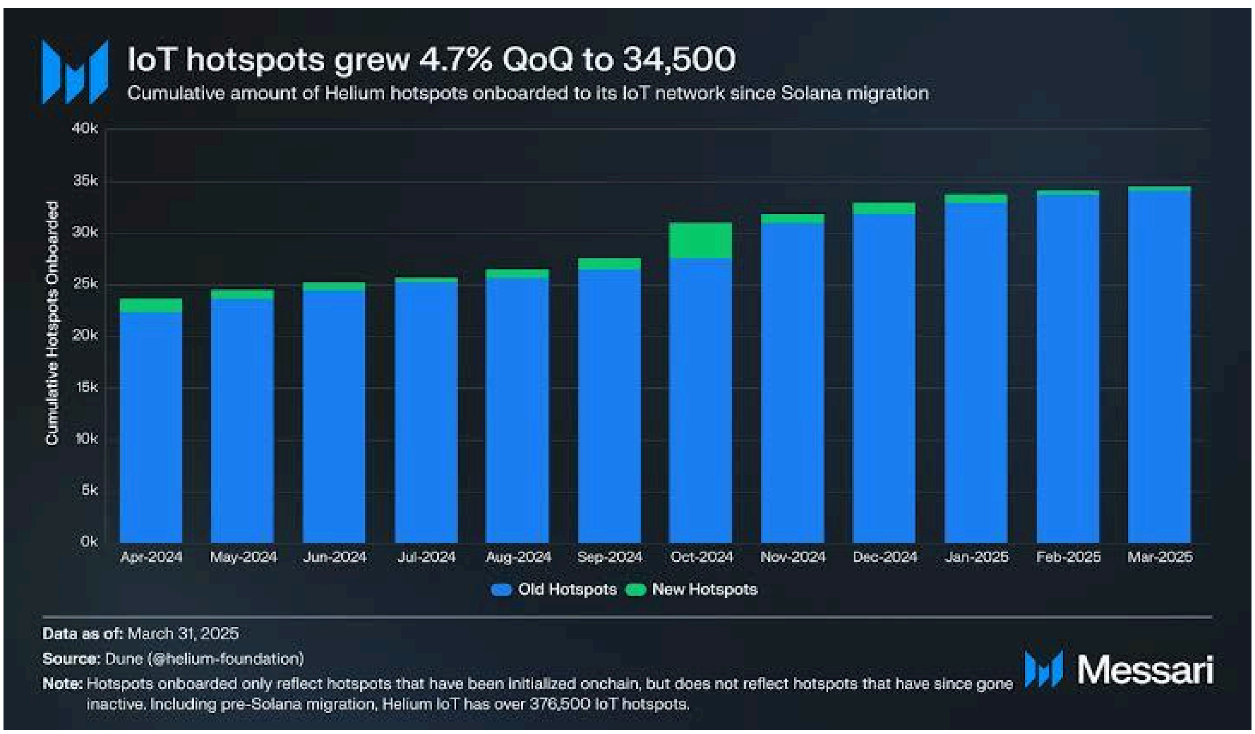
Helium

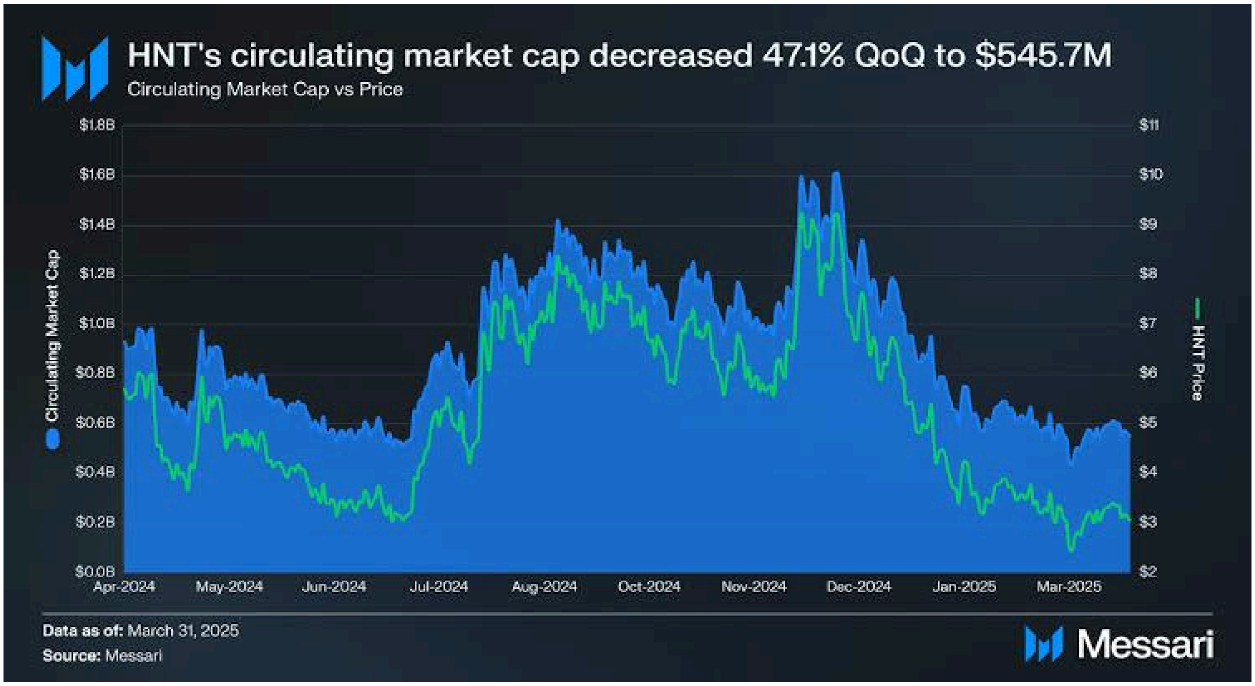


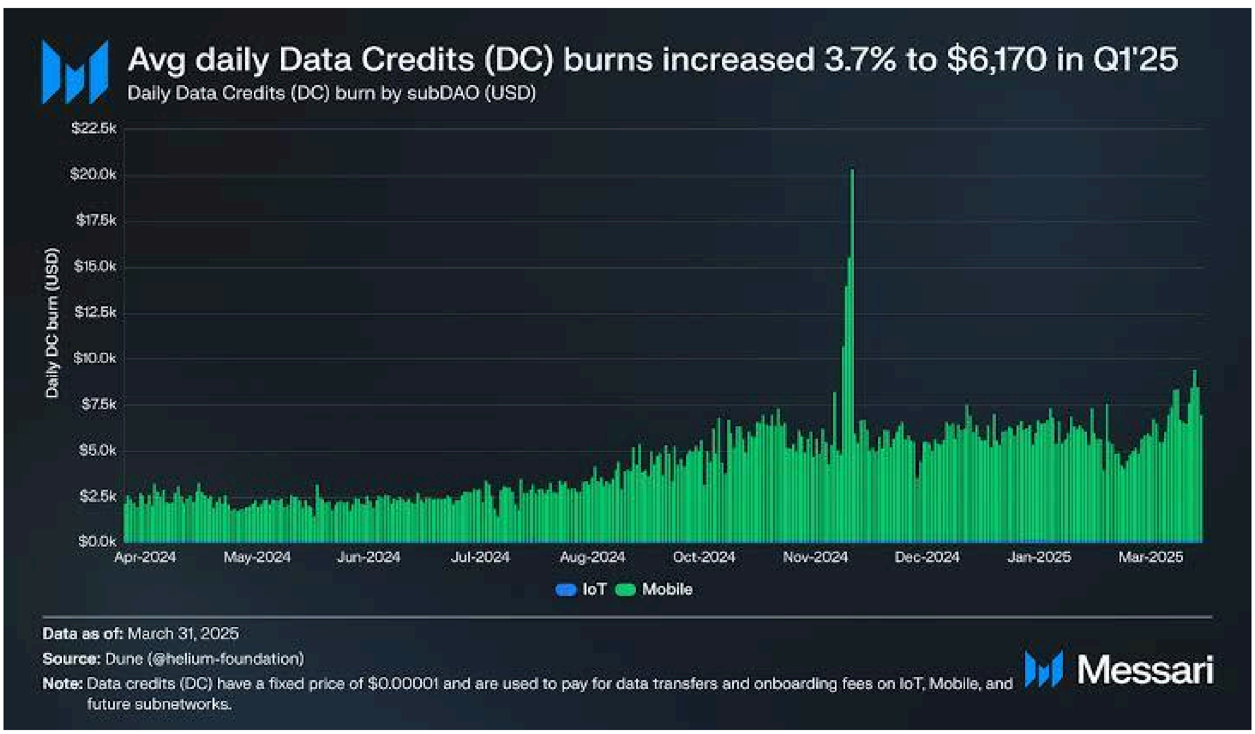
Helium was co-founded in 2013 by Amir Haleem, Sean Fanning, and Shawn Carey to build a decentralized wireless network powered by users. By 2021, it had deployed over 500,000 Hotspots globally on its own **Layer1** blockchain.

But its native chain lacked scalability and developer traction. In April 2023, Helium migrated to Solana, bridging its tokens ($HNT, $IOT, and $MOBILE), revamping its onboarding and rewards system, and shutting down its Layer1 entirely.


Helium's avg daily IoT DC burned increased 17.2% QoQ to $126.68
Daily IoT DC Burn (USD) by Organization
Daily IoT DC Burn (USD)
$350
$300
$250
$200
$150
$100
$50
$0
Apr-2024
May-2024
Jul-2024
Aug-2024
Oct-2024
Nov-2024
Jan-2025
Feb-2025
Avg IoT DC Burn (Q4'24)
LoneStar
QoQ Change
$53.55
Axrz...xhAa
QoQ Change
$13.62
HF Console
QoQ Change
$9.46
G2Qn...6hTG
QoQ Change
$9.30
qK8m...Z3we
QoQ Change
$9.10
HeyIoT
QoQ Change
$6.41
27.0%
Others
QoQ Change
$25.24
4.0%
Data as of: March 31, 2025
Source: Dune (@helium-foundation)
Note: Data credits (DC) have a fixed price of $0.00001 and are used to pay for data transfers and onboarding fees on IoT, Mobile, and future subnetworks. HF is the Helium Foundation.
Messari


IoT hotspots grew 4.7% QoQ to 34,500
Cumulative amount of Helium hotspots onboarded to its IoT network since Solana migration
Cumulative Hotspots Onboarded
40k
35k
30k
25k
20k
15k
10k
5k
0k
Apr-2024
May-2024
Jun-2024
Jul-2024
Aug-2024
Sep-2024
Oct-2024
Nov-2024
Dec-2024
Jan-2025
Feb-2025
Mar-2025
Old Hotspots
New Hotspots
Data as of: March 31, 2025
Source: Dune (@helium-foundation)
Note: Hotspots onboarded only reflect hotspots that have been initialized onchain, but does not reflect hotspots that have since gone inactive. Including pre-Solana migration, Helium IoT has over 376,500 IoT hotspots.
Messari



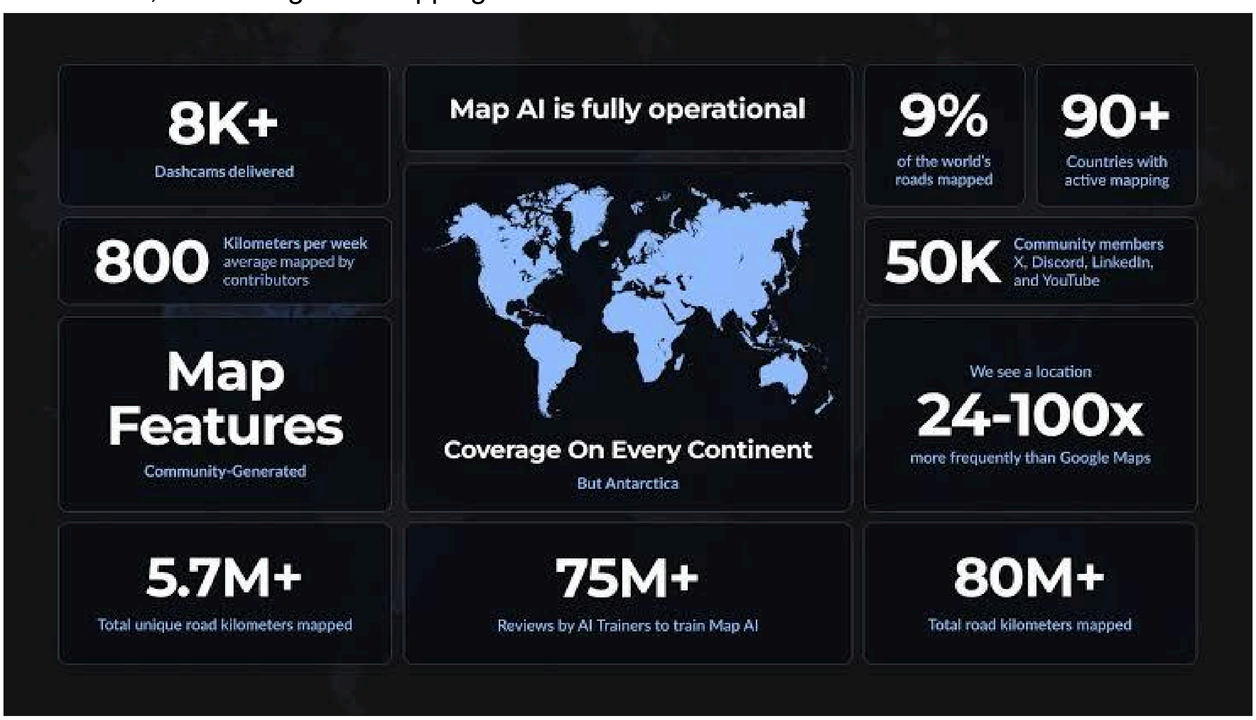


Solana's high throughput, low fees, and strong developer base allowed Helium to focus on expanding its network. [Today, it powers Helium Mobile, offering U.S. coverage via T-Mobile](#).

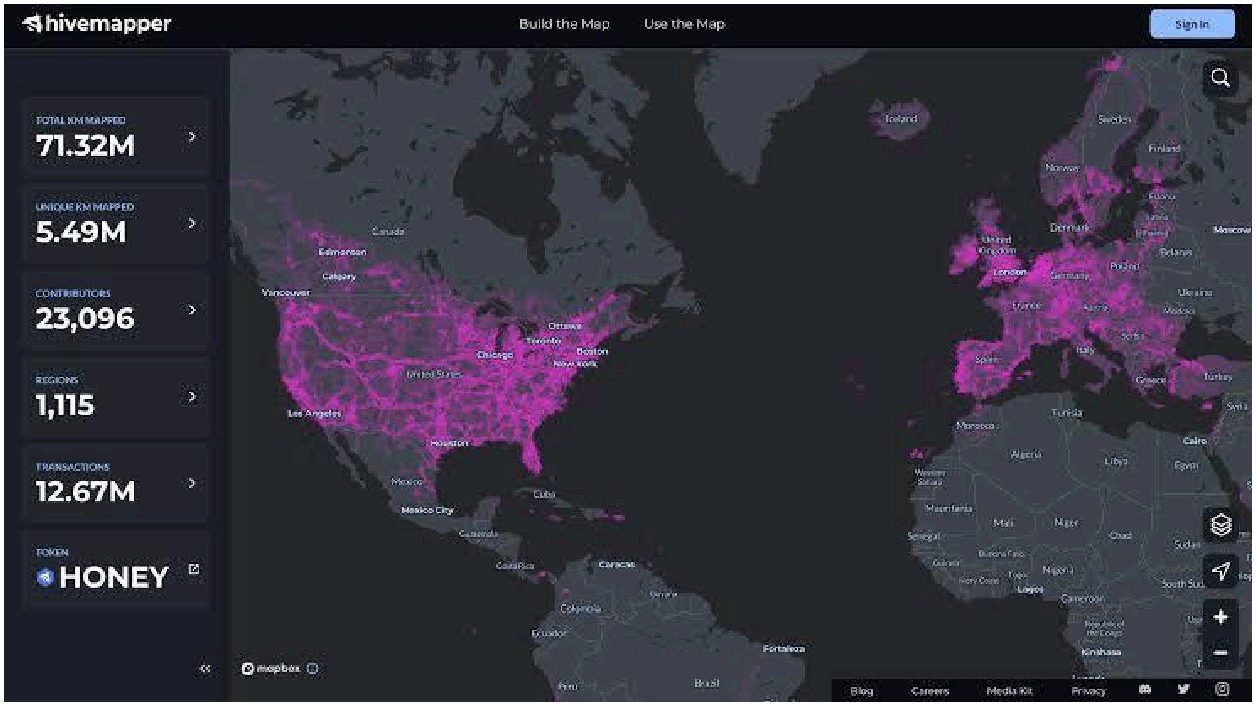
As of July 23, 2025, Helium holds a $643M market cap, with $HNT trading at $3.50.

Hivemapper

Hivemapper, founded in 2015 by Ariel Sidman, started with drones but later shifted to dashcams for scalable, real-time global mapping.



Drivers collect street-level imagery passively using tools like [LiDERBot](), earning rewards as they go.



In **November 2022**, it launched on the Solana blockchain to leverage fast, low-cost transactions. Since then, over **2.4 million miles** of roads have been mapped globally, powered by a decentralized community, not corporations.

Most recently, Hivemapper's mapping solution, **Bee Maps**, partnered with **Lyft** on **May 14, 2025**. Lyft now uses Bee Maps' frequently updated data, fed by everyday drivers, for better navigation and real-time routing. Reported by CoinDesk.

Its native token, **$HONEY**, currently trades at **$0.02201** with a **$103 Million** market cap.

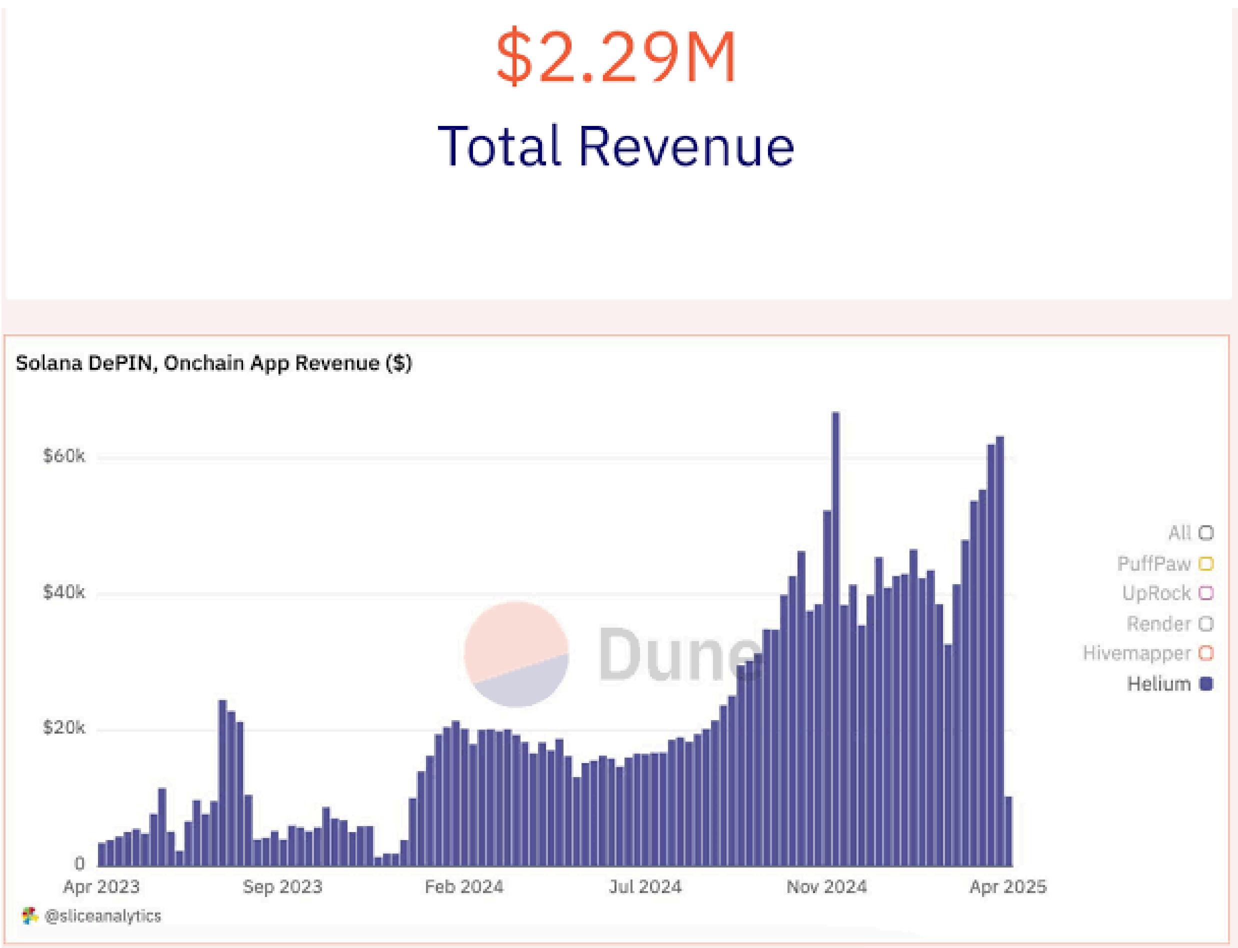
This DePIN model ensures transparency, fairness, and an ecosystem built by the people, for the people.

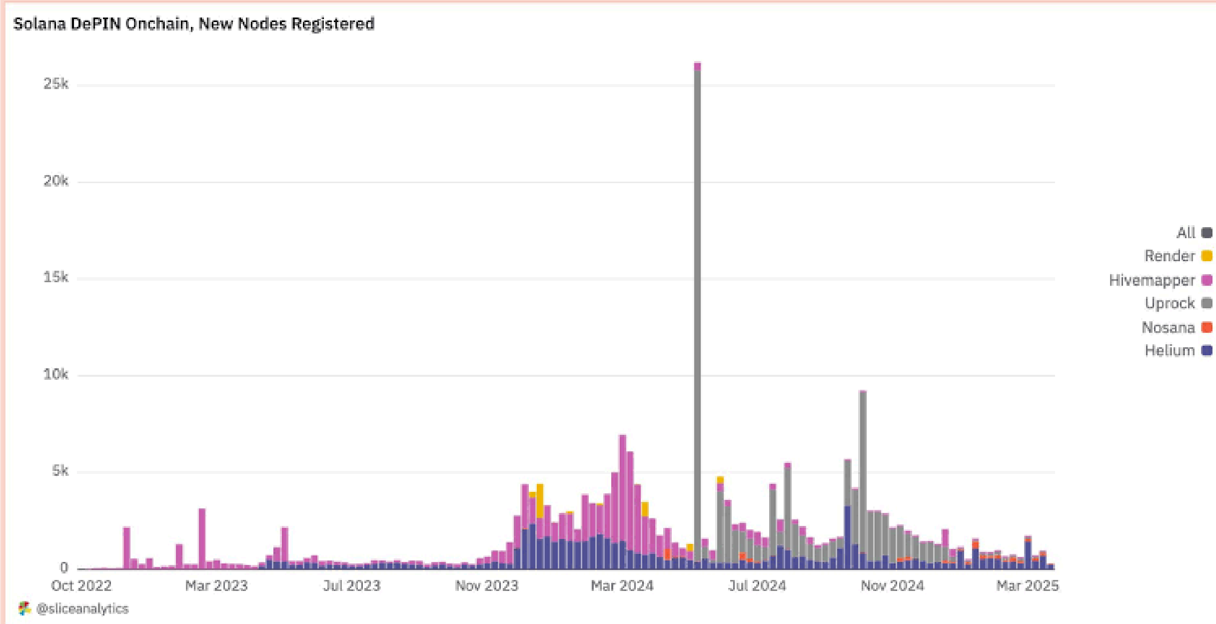
How DePINs Powered by Solana Outperform Web2 Infrastructure

Traditional infrastructure platforms are expensive to build, slow to scale, and controlled by a few companies. DePIN flips that model. It offers incentives to everyday users, gives them ownership in the networks they support, and grows organically through user demand, not corporate strategy.

Web2 systems rely on closed data and tight control. DePIN platforms like Hivemapper or Helium rely on open data and broad participation. As a result, innovation happens faster, and access is more widely distributed.

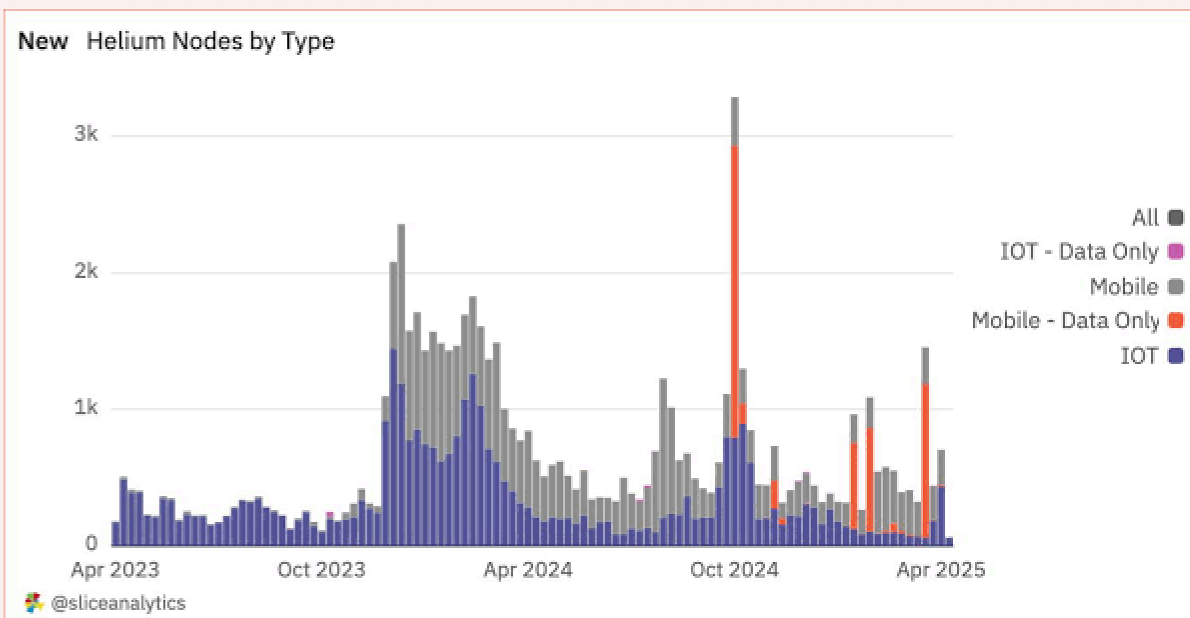
What the Future Holds for DePIN on Solana





69,449

Total Nodes



As more physical infrastructure becomes digitized, the demand for user-owned, decentralized systems will only grow.

DePIN is still in its early stages, but it's already showing that open, community-driven networks can compete with, and even outperform, traditional centralized models.

Solana’s fast, low-cost, and secure blockchain makes it an ideal backbone for powering DePIN projects at scale. With analysts like Messari predicting a $3.5 trillion DePIN market cap by 2028, Solana is well-positioned to lead this shift and capture a significant share of the growth.

Conclusion

DePIN is changing how infrastructure gets built, by people, not corporations. Solana’s speed, low costs, and active developer base are powering real projects, from wireless networks to mapping and computation.

These tools show that they can solve everyday problems, not just power finance.

What used to be built by companies is now being shaped by communities.