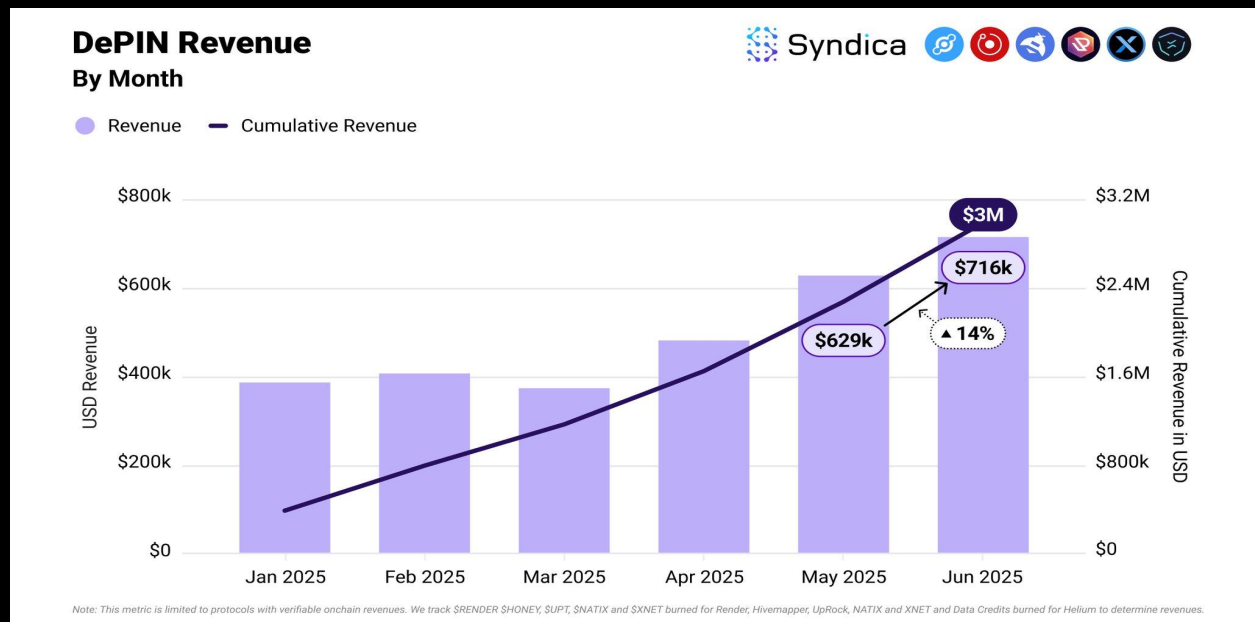


Unpacking DePIN on Solana

Unpacking Decentralized Physical Infrastructure Network (DePIN) on Solana



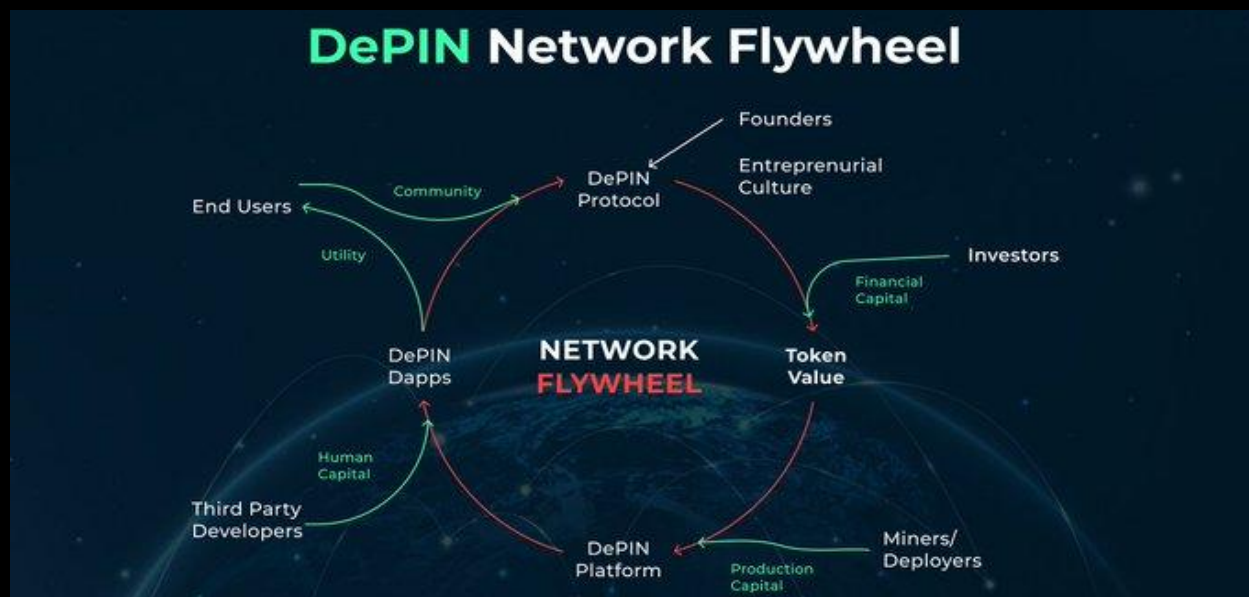
Solana DePIN Revenue. Source: https://x.com/Syndica_io/status/1945154073721729331

What is a DePIN?

Decentralized Physical Infrastructure Networks (DePIN) are simply a decentralized network of people who need certain real-world infrastructure or resources, contributors who are willing to supply, and ideally a blockchain-powered system that effectively manages usage and rewards fairly.

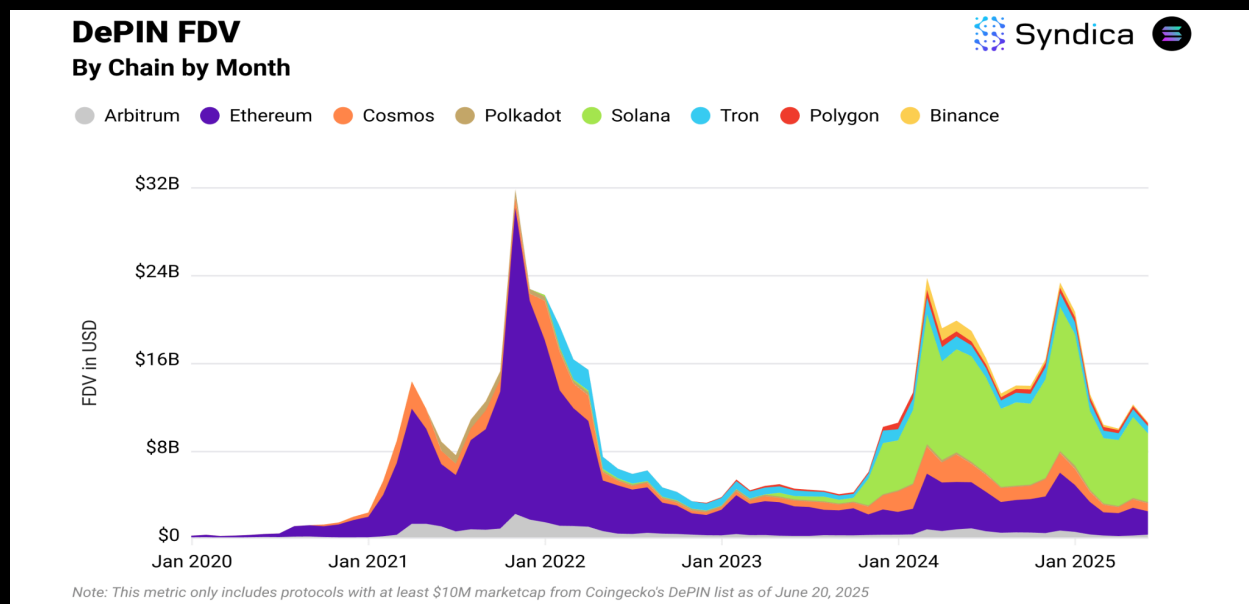
Contribute by offering infrastructure/resources such as excess storage space or data on a DePIN system made available and get rewarded in tokens based on your contribution(s). These rewards are from the revenue generated from fees paid by consumers, like someone in need of storage space.

These consumers are drawn to the cheaper charges compared to traditional alternatives. As the network grows, the token grows in value, which means more rewards for those who contribute and higher attraction for investors, and even more contributors, leading to a DePIN Flywheel.



DePIN Flywheel. Source: https://x.com/dr_andrewlaw/status/1649067731268894720

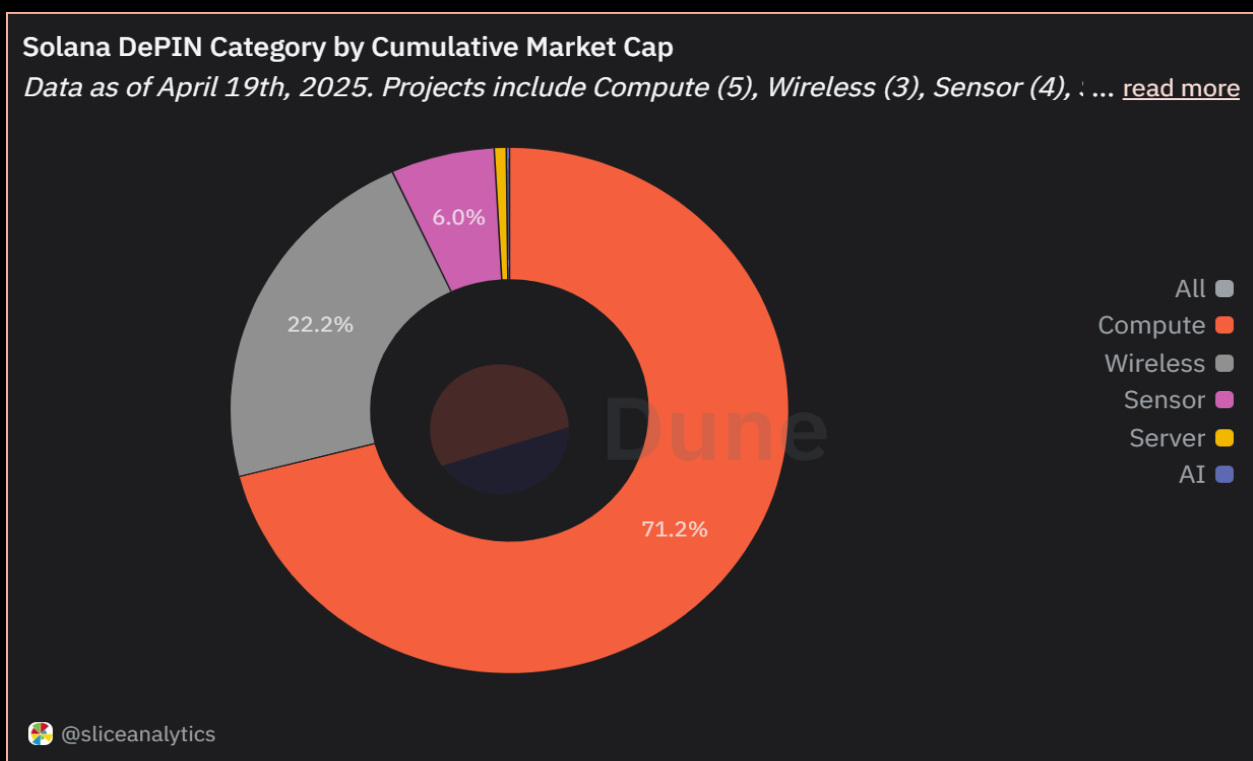
Imagine all that on Solana, which doesn't just stand out as the leading chain in major metrics such as daily transaction volume, but is also capable of handling thousands of transactions per second at a low cost. That's why Solana now has the highest DePIN FDV market cap in crypto.



Core Parts of a Solana DePIN Product

- Program(s): Programs that can handle the automation of resource distribution, monitor usage, and execute payments securely and transparently.
- Tokens: The rewards for the contributors that can also be traded and used within the network
- The Distributed Network of Contributors and their hardware

Solana DePIN Verticals/Use-Cases



Solana DePIN verticals comparison as of April 2025. Source:
<https://dune.com/sliceanalytics/solana-depin-market>

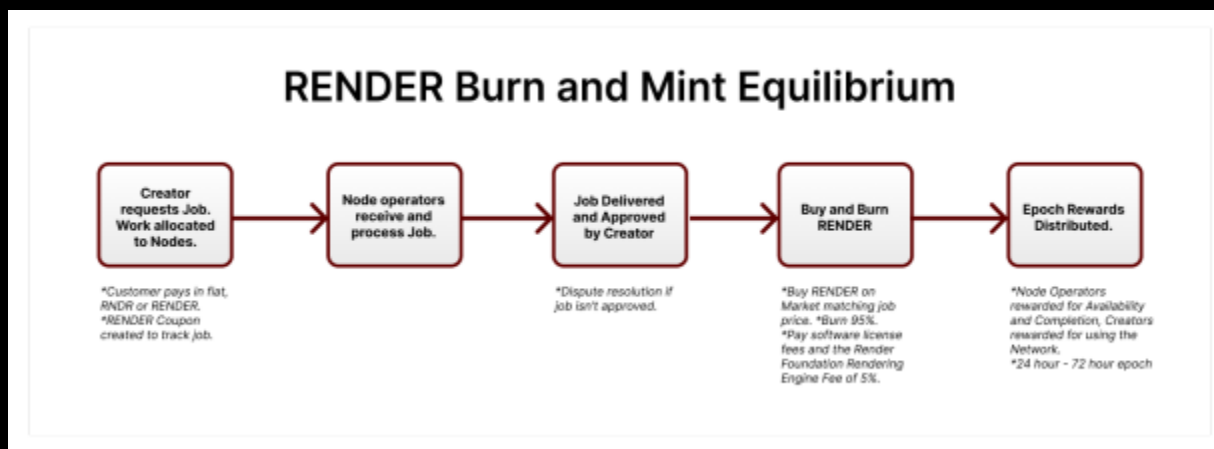
• Compute

This is decentralized access to spare processing power and storage resources. A cheaper alternative to AWS or Google Cloud.

Render is one of the DePIN products that offers compute services. It is a high-performance distributed GPU rendering network that facilitates a compute marketplace between those in need of GPUs and those ready to rent out their GPUs.

Like an Airbnb for GPUs, in the words of Yash Agarwal of SendAI

As of July 2025, the Render Network has 3,791 active onchain nodes(GPU Providers). Revenue comes from RENDER tokens burned when users pay for compute tasks. Rewards are newly minted tokens distributed to GPU node operators.



Render BME Model

Other Compute/Storage DePIN Products on Solana include Nosana, Hivello, and Aethir.

• Wireless Networks

Individuals or Communities deploy and operate wireless hardware like routers, hotspots, or antennas and are rewarded in tokens when people use their network. An Airbnb for Internet Connections, you might say.



Helium Hotspot

Helium is a good example. It offers a more flexible and affordable alternative for wireless coverage, serving IoT, 5G, and consumer mobile needs through its hotspot device available in over 192 countries.

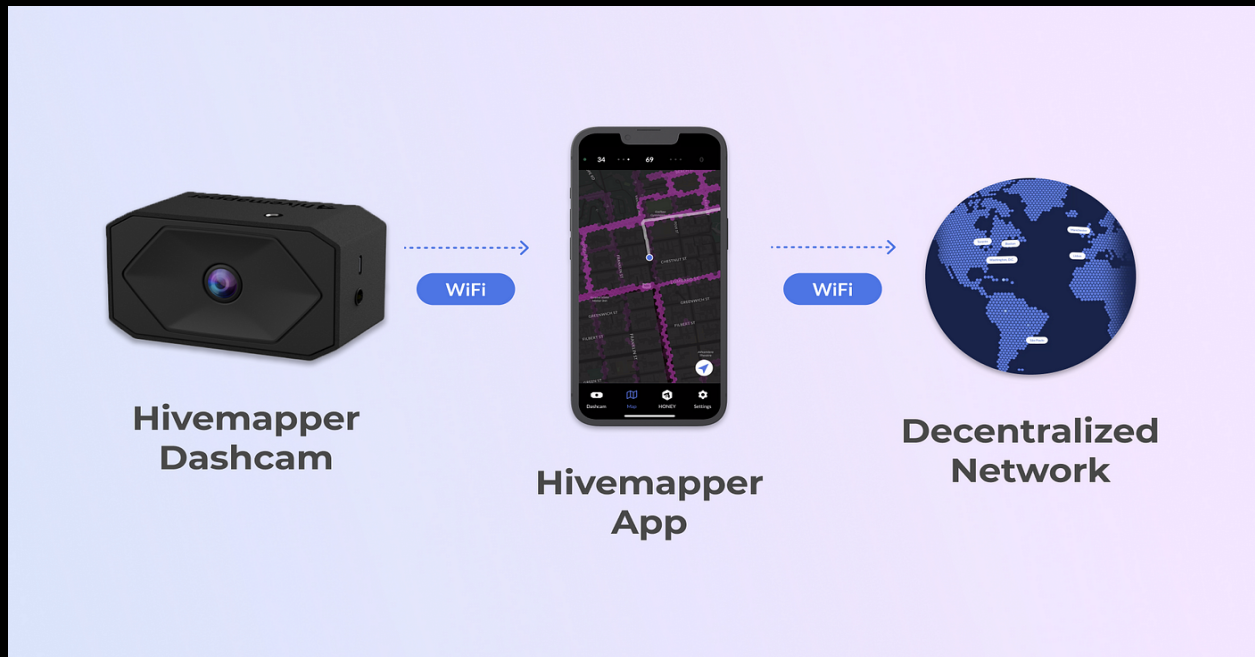
The primary token powering the network is HNT, while IOT and MOBILE tokens are used to facilitate the LoRaWAN and 5G networks.

Helium generates onchain revenue through a BME model where users convert HNT into non-transferable Data Credits (DCs) to access services on its IoT and Mobile networks. Mobile data is billed at \$0.50 per gigabyte (50,000 DCs), while IoT usage is charged per 24-byte message increment.

Other examples of Wireless DePIN Products are Wireless XNET, Dabba Network and Roam.

• Sensors

These are DePIN products targeting the collection of real-world data through special devices (sensors). Anyone can deploy a sensor and get rewarded for contributing valuable data. An Airbnb for real-world data on the blockchain.



Hivemapper is one of these products. Hivemapper is a decentralized, community-driven mapping network that rewards users with HONEY tokens for collecting street-level imagery using dashcams. An alternative to a traditional mapping service like Google Maps.

Hivemapper earns revenue through Map Credits (\$0.005 each), purchased by burning HONEY tokens to access map data. And it serves major customers like Lyft, TomTom, Mapbox, and Trimble.

The advantages of community-driven mapping networks aren't just monetary. Due to being a community-driven network, there is more regularly updated mapping coverage than the traditional alternative.

The Sensor Vertical can be categorized further into

- Mapping/Geodata: Hivemapper, GEODNET
- Sports & Health: Cudis
- Energy & Environment Monitoring: DeCharge, WeatherXM

• AI

AI Systems take a great deal to create, train and manage. DePIN makes it easier to contribute to the creation and management of AI systems and get rewarded.

A good example is the [Grass Network](#). Grass is where people earn rewards for sharing unused internet bandwidth with the Grass network. Customers use that bandwidth to pull public-web pages in real time-mainly to feed AI models(LLMs).

Airbnb for Data Mining?



The revenues generated by the network, which are either in USD or any supported token are then converted into GRASS.

Grass is certified by industry-leading cybersecurity organizations like AppEsteem, ensuring data privacy. Plus, they only allow verified consumers to use your unused internet bandwidth for safe activities.

Advantages of DePIN over Web2 Alternatives

- **Incentivization:** Contributors' rewards lead to the continuous availability of resources(manpower and computing), which then leads to more resources and rewards, all with little to no management cost on the side of the project.
- **Community engagement:** Due to the self-sustaining economic system created by these tokens, community members handle a good portion of the marketing of these products. More reach means more use and more rewards.

- **Transparency:** All activities within a DePIN are recorded onchain. This reduces the risk of fraud, corruption, and mismanagement of resources. So there is a fair distribution for contributors and also a better understanding of consumer and contributor behaviours.
- **Wider Reach:** Costs from maintaining resources or sourcing for data are reduced by incentivizing contributors from different parts of the world to share unused resources/time. This means lower cost for a wider range/reach of data/resources.
- **Scalability/Resilience:** Decentralizing resources reduces the risk of a centralized point of failure/downtime in a region. That means these systems can continue to function even if some nodes fail.

Product	DePIN	Web2 Alternative	Advantage
Compute	Render	AWS, Azure, Google Cloud	Cheaper when dealing with GPU-intensive jobs. Also, nodes do not retain access to your data unless explicitly allowed, unlike AWS and other cloud services
Wireless	Helium	Starlink, Verizon	Users earn tokens for providing cheaper mobile data
Sensors	Hivemapper	Google Maps, Apple Maps	Its data is updated more frequently
AI	Grass	Scale AI, Appen	The contributors retain some control over the data shared