



# The State of Staking

**\$728 BN** (571% Y/Y)

Market Cap of Top PoS Assets

**31%** (+127% Y/Y)

PoS Share of Total Market Cap

**25**

PoS Chains in Top 100

**14%** (+9% Y/Y)

Average Yield

**\$15 BN** (939% Y/Y)

Annualized Staking Rewards

# Proof of Stake Displacing Proof of Work

If 2020 was the year proof-of-stake (PoS) emerged, 2021 was the year of its dominance. PoS dominance, or market share of the total crypto market capitalization, was 31% at the end of 2021, a Y/Y increase of 127%. Excluding Bitcoin, PoS dominance reached 50%. By the end of 2021, PoS secured 5 of the top 10, and 25 of the top 100 crypto assets by market capitalization. PoS dominance of the top 10 assets increased by 134% in 2021, reaching 34%. There are more thriving PoS ecosystems and staking opportunities than ever.

RANK	ASSET	12/31/21 MARKET CAP (\$BN)	Y/Y GR %	POS
1	Bitcoin / BTC	892.6	67%	-
2	Ethereum / ETH	441.7	415%	✓
3	Binance / BNB	87.1	1,442%	-
4	Tether / USDT	78.4	275%	-
5	Solana / SOL	53.3	9,446%	✓
6	Cardano / ADA	43.4	530%	✓
7	USDC / USDC	42.4	1,045%	-
8	XRP / XRP	40.0	315%	-
9	Terra / LUNA	30.5	10,502%	✓
10	Polkadot / DOT	29.4	413%	✓

**Source:** Market capitalization (circulating token supply \* price) per <http://coingecko.com>. Fully diluted valuation was not used in this report.

2021 was an absolute banner year for PoS assets. The number of decacorns, or assets with a market capitalization of \$10BN+, increased from 6 in Q3 2021 to 8 in Q4. Osmosis and Oasis were top 25 PoS assets for the first time, with market caps of \$1.6BN and \$1.4BN. As detailed below, Polygon, NEAR and FLOW were the best performing PoS assets in Q4.

	MARKET CAP (\$BN)	Q/Q GROWTH %	POS RANK
Polygon (MATIC)	\$17.5	144%	9 to 7
Near	\$9.3	194%	15 to 9
Flow	\$2.8	172%	27 to 18

**Source:** Market capitalization per <http://coingecko.com>.

**Note:** As of 01/25/22, the market capitalization of the top 35 PoS assets had decreased by 32% since the end of 2021. There are still 8 PoS decacorns though. PoS is still securing 5 of the top 10 crypto assets, and there are now 27 PoS assets in the top 100. Osmosis' market cap has actually increased by 64% to \$2.6BN, making it the 15th most valuable PoS asset, up from 25. Oasis remains a top 25 PoS asset with a \$1.1BN market cap.

In 2021, annualized staking rewards increased by a stunning 939% to \$14.7BN, a 21% Q/Q increase over Q3's \$12.2BN. Investors would need to buy \$860BN worth of 10-year treasury bills to earn a similar return. For comparison, Bitcoin's market cap ended 2021 at \$890BN, and the top 35 PoS assets were worth \$728BN.

\$BN	Q4 20	Q1 21	Q2 21	Q3 21	Q4 21	Q4/Q3	Y / Y%
Annualized Staking Rewards	1.4	9.5	16.0	12.2	14.7	20.8%	939.0%

**Source:** Annualized staking rewards are calculated by multiplying the market cap, stake rate and staking yield for each protocol on the last day of the quarter (e.g. 09/30/21 or 12/31/21). Market capitalizations per <http://coingecko.com>. Stake rate and yield data per on-chain block explorers.

Both the average and median stake rates decreased during 2021. The average stake rate decreased by 2% from 44.1% at the end of 2020, to 43.2% at the end of 2021. The median stake rate decreased by 2% from 42.8% to 41.9%. There is an inverse relationship between the stake rate and the staking yield. As the stake rate decreases, the yield increases, and vice versa.

As a result, the decrease in stake rates contributed to an increase in the staking yields. The average staking yield increased by 9% Y/Y reaching 13.9% at the end of 2021, while the median yield increased by 40% to 9.8%.

# Eth Competitors Gaining Share While Smart Contract TAM Explodes

In 2021, demand for smart contract block space exploded, driven by DeFi and NFTs. L1 PoS blockchains generated record usage and economic value secured, or total value locked (TVL). Ethereum was beset by scaling challenges and high transaction fees. Competing L1s added Ethereum's winning use cases and incentives. As a result, PoS dominance for competing L1s increased by 88% during 2021, reaching 39%.

	12/31/21 MARKET CAP (\$BN)	12/31/20 MARKET CAP (\$BN)	Y / Y GR %	POS RANK (Y/Y)	STAKING YIELD (12/31/21)
Ethereum	441.7	85.8	415%	1 to 1	5.2%
Solana	53.3	0.6	9,446%	9 to 2	5.6%
Cardano	43.4	6.9	530%	2 to 3	4.6%
Terra	30.5	0.3	10,502%	13 to 4	7.7%
Polkadot	29.4	5.7	413%	3 to 5	14.7%
Avalanche	24.7	0.2	10,884%	18 to 6	9.8%
Polygon	17.5	0.1	19,980%	20 to 7	11.3%
Algorand	11.0	0.3	3,975%	16 to 8	0.7%
Near	9.3	0.3	3,123%	14 to 9	12.1%
Cosmos	8.6	1.3	564%	6 to 10	14.7%

**Source:** Market capitalizations per <http://coingecko.com>. Staking Yield per on-chain block explorers.

Peak TVL increased by an impressive 22% Q/Q, reaching a record \$221 BN of economic value secured in Q4 2021. Ethereum's TVL dominance decreased by 7% to 76% in the quarter.

	Q4 PEAK TVL (\$BN)	Q3 PEAK TVL (\$BN)	Q/Q GR%
Ethereum / ETH	167.5	148.6	13%
Terra / LUNA	21.0	9.9	112%
Solana / SOL	15.3	13.7	12%
Avalanche / AVAX	13.6	8.4	62%
Elrond / EGLD	2.1	-	-
Osmosis / OSMO	0.8	0.5	60%
THORChain/RUNE	0.4	0.2	100%

**Source:** <http://defillama.com> for TVL.

Polkadot finally launched their long-awaited parachain auctions. This generated significant demand for DOTs, driving the price from \$32 before the launch to \$54 at the peak of Q4 2021. To participate in the auctions, investors stake DOTs with a 2 year lock-up. In return, they earn parachain tokens.

The initial five winning parachains raised a total of 99MM DOTs worth \$2.7BN as of 12/31/21. Moonbeam and Acala, both EVM-compatible smart contract blockchains, raised close to \$1BN worth of DOTs each.

PARACHAIN	DOTS RECEIVED (MM)	DOT VALUE ON 12/31/21 (\$MM)
Moonbeam	35.8	956.2
Acala	32.5	869.5
Parallel	10.8	287.5
Astar	10.3	276.3
Clover	9.8	260.8
<b>Total</b>	<b>99.1</b>	<b>2,650.3</b>

**Source:** <https://parachains.info/auctions/polkadot-1-5>. DOT price of \$26.74 as of 12/31/21.

# ETH Layer 2's Are Live. Will Ethereum Finally Scale?

2022 promises to be the year Ethereum finally scales. Many of crypto's most popular protocols have now launched on Ethereum L2s. And Ethereum L2s have delivered an 88% - 100% reduction in transaction costs.

The Ethereum ecosystem is relying upon a variety of Layer 2 (L2) blockchains – including Arbitrum, Optimism, ZkSync and Starkware's StarkEx – as the near term scaling solutions until sharding is implemented.

These Ethereum L2s are secured by, and eventually settle to the main Ethereum L1 chain using either Optimistic or zero-knowledge (zk) rollup technology. The L2 chains provide many orders of magnitude of improvement in transactions per second (TPS) and transaction fees, and a significantly better overall user experience.

	TECHNOLOGY	TPS (TRADES)	SWAP COST	TVL \$MM (12/31/21)
Arbitrum	Optimistic	~ 20,000	\$3.60 (-88%)	1,870.0
Optimism	Optimistic	N/A	\$1.78 (-94%)	342.7
StarkEx	zk	9,000 (600x)	~ \$0 (-100%)	1,086.3
Ethereum	-	15	\$29.21	151,660

**Source:** <https://l2fees.info/> for swap costs. <http://defillama.com> for TVL. [Nansen](#) and [Bankless](#) and for TPS estimates, where TPS is transactions per second for trades or swaps (not transfers).

Arbitrum and Optimism are both Optimistic roll-up based Ethereum L2s with EVM support that launched in Q3 2021. Arbitrum launched in September 2021, and ended 2021 with \$1.9BN in TVL, the highest of the L2s. At the end of 2021, there were 300k+ unique addresses using the chain.

Popular protocols deployed on Arbitrum include Uniswap, Aave, MakerDAO, Curve, 1inch and SushiSwap.

StarkEx is a zk-Rollup developed by StarkWare that launched in June 2020. Per [Bankless](#), as of mid-November 2021, StarkEx had processed 42MM transactions and a cumulative trading volume of \$185BN across the four protocols it currently powers – dYdX, Sorare, ImmutableX and DeversiFi. ImmutableX offers \$0 gas fees for minting and trading NFTs, while DeversiFi offers \$0 gas fees for trading.

Polygon (EVM-compatible sidechain), among the fastest growing L1 blockchains detailed in the previous section, spent \$1BN+ in 2021 acquiring zk-based L2 roll-up technology and expertise, including Hermez Network’s zkEVM for \$600MM and Mir Protocol for \$400MM.



# Appendix

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## Top 35 Staking Chains by Market Cap

PROJECT	TICKER	MARKET CAP	YIELD	STAKE RATE
Ethereum	ETH	441,654,436,878	5.2%	7.7%
Solana	SOL	53,261,290,660	5.6%	77.1%
Cardano	ADA	43,402,759,873	4.6%	53.6%
Terra	LUNA	30,535,775,367	7.7%	37.8%
Polkadot	DOT	29,412,068,041	14.7%	53.2%
Avalanche	AVAX	24,667,095,817	9.8%	58.2%
Polygon	MATIC	17,502,252,399	11.3%	34.0%
Algorand	ALGO	10,975,474,295	0.7%	21.0%
NEAR	NEAR	9,282,255,312	12.1%	40.6%
Cosmos	ATOM	8,608,785,747	14.7%	59.0%
TRON	TRX	7,922,530,750	2.8%	25.2%
Fantom	FTM	5,350,618,935	14.2%	47.0%
Elrond	EGLD	4,861,483,356	17.9%	52.8%
Tezos	XTZ	3,787,677,751	6.0%	72.5%
Helium	HNT	3,768,150,401	6.2%	31.6%
The Graph	GRT	3,382,956,953	10.7%	27.6%
EOS	EOS	3,007,917,726	2.7%	37.0%
Flow	FLOW	2,785,428,079	9.1%	52.1%
Harmony	ONE	2,622,071,721	10.3%	34.5%
Kusama	KSM	2,515,351,112	17.5%	41.8%
Stacks	STX	2,358,282,676	7.4%	25.4%
Thorchain	RUNE	2,031,636,344	28.2%	7.0%
Celo	CELO	1,757,953,363	5.0%	47.9%
Osmosis	OSMO	1,565,642,307	93.0%	35.7%
Oasis	ROSE	1,446,882,043	8.2%	55.5%

# Appendix

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## Top 35 Staking Chains by Market Cap

PROJECT	TICKER	MARKET CAP	YIELD	STAKE RATE
Dash	DASH	1,402,375,190	5.8%	41.9%
Mina	MINA	1,204,499,882	22.0%	88.9%
Livepeer	LPT	991,810,129	18.5%	49.7%
Decred	DCR	986,712,611	3.9%	62.5%
QTUM	QTUM	920,858,963	8.3%	5.7%
ICON	ICON	882,352,510	13.0%	46.8%
Audius	AUDIO	843,682,015	22.0%	29.7%
Secret	SCRT	791,306,305	27.2%	55.1%
Horizen	ZEN	729,459,052	8.2%	34.2%
Kava	KAVA	555,330,514	33.3%	60.1%
<b>Total</b>		<b>727,775,165,077</b>		
<b>Average</b>		<b>20,793,576,145</b>	<b>13.9%</b>	<b>43.2%</b>
<b>Median</b>		<b>2,785,428,079</b>	<b>9.8%</b>	<b>41.9%</b>

**Source:** <http://coingecko.com> for market cap and public block explorers for Yield and Stake Rate data, as of 12/31/21.

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# About Staked

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Staked is the leading non-custodial staking service provider. Staked offers staking services for 32 proof-of-stake blockchains with \$7BN+ of delegated assets. The leading investors, exchanges and wallets trust Staked to reliably and securely deliver the optimal staking rewards. Kraken acquired Staked in December 2021.

For more information about Staked, please visit: <http://staked.us>

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*\*Staking on certain blockchains entails slashing risk, which can result in loss of staked tokens. Investing in crypto assets is high risk and not suitable for every consumer. The value of crypto assets may go down or up. As many crypto products and markets are unregulated, you may not be protected by government compensation and/or regulatory protection schemes. You should be prepared to lose all your money if things go wrong.*