



HEX Shares

explained

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Basics / Definitions

- In HEX, in order to participate in the yield distribution, you must “Stake” your liquid HEX
- **Staking** is the act of locking up your HEX for a fixed period of time
- When you stake, your HEX is converted to “Shares” (the liquid HEX is burned for newly created Shares)
- Your **Shares** represent your respective percentage of the overall distribution of the yield...ie: “your piece of the pie”
- Example:
 - Total # of Shares in the staker pool = 100
 - You own 2 Shares
 - Therefore, You receive 2% of the total daily payout (in HEX) each day
- **Yield** is made up of the inflation (3.69% APY of total supply) plus penalties from Emergency End Stakes/Late end staking
- **T-Share** = a Trillion shares
- **B-Share** = a Billion shares



Converting HEX to Shares

Calculation of the # of Shares you will receive:

The amount of HEX to be staked/"Share Rate"

Share Rate is the amount of HEX required to acquire a Trillion Shares

(ex. Current Share Rate (Dec 9, 2021) = 19,678 HEX/T-Share)



Converting HEX to Shares

To encourage people to stake longer and bigger (larger amount) there are 2 separate bonus features

1. Longer Pays Better

- You receive 20% more “Effective HEX” for each year you stake
- Effective HEX – This is used to calculate your Shares
- This bonus has a maximum of 200% additional “Effective HEX” (i.e. 10 year Stake)
- The **Effective HEX** is then used to determine your # of shares
- Example:
 - 100,000 HEX : 5yr Stake : Share Rate = 20,000 HEX/T-Share
 - Effective HEX = Principle + (Principle*(years of Stake*20%))
 - $100,000 + (100,000 * (5 * 20\%)) = 200,000$ Effective HEX
 - **Formula:** # of Shares = Effective HEX/Share Rate
 - $200,000 \text{ Effective HEX} / 20,000 = 10$ T-Shares
 - NOTE: the Amount of T-shares remains constant for the duration of your stake.

Note: The Bigger Pays Better Bonus has been ignored for simplicity in this example.



Converting HEX to Shares

2. Bigger Pays Better

- The larger the amount of HEX you Stake, the more you make
 - You can receive up to an additional 10% Effective HEX (capped at 150 million HEX)

- Example:

100,000 HEX will give you 6.67 effective HEX bonus



Longer Stake outperforms multiple short Stakes

- **Fundamental Principle:** A long Stake will outperform multiple successive short Stakes
- **Problem:** In the development of HEX, it was realized that placing short Stakes and using the yield to compound back into a new Stake & repeating this multiple times (over months/years) would create a scenario where this compounding effect would outperform a single long Stake over the same duration.
- **Solution:** HEX developers designed an ingenious feature that will force the Share Rate to continuously ratchet up incrementally (i.e. Share Rate will never go down).
- **Solution Rule:** When your Stake ends, you cannot create a Stake with equal parameters (same amount of HEX and same length of stake) and receive the same # of Shares.



Share Rate Ratcheting: How is this done?

Example: Stake Length 30 days : Principal 100,000 HEX : T-Share Rate 20,000 HEX/T-Share : Daily Payout 6 HEX/T-Share

Stake Start:

- # of T-Shares = # of HEX/T-Share Rate
- # of T-Shares = $100,000/20,000$
- # of T-Shares = 5
- Yield (at Stake maturity of 30days) = 5 T-Shares x 6 HEX/day x30 days = 900 HEX

Recalculation and check of the share rate

- At Stake maturity: In order to satisfy the Rule, The contract will perform a calculation where the amount of Shares is now **FIXED**, and uses the new amount of HEX (Principle plus Yield) to solve for new T-Share rate. This is expressed as follows.
 - # of T-Shares = # of HEX (Principle + Yield)/T-Share rate
 - Rearrange and solve for T-Share Rate
 - T-Share Rate = # of HEX (Principle + Yield)/# of T-Shares
 - T-Share Rate = $100,900\text{HEX}/5$ T-Shares
 - T-Share Rate = 20180 ... Notice that 20,180 is incrementally greater than 20,000 (original Share Rate)
- This is your new T-Share Rate. It is then compared to the existing system global T-Share Rate. If this rate is greater, it will set the new global T-Share Rate for you and everyone else. If not, (ie: global rate is higher than your new rate), then you will need to use the global rate if/when creating a new Stake.
- This recalculation and check is performed at the conclusion of every future Stake. This is how the T-Share rate continuously ratchets up.



Note: In the example, Bigger pays better was ignored for simplicity