

What is it?

Torch is a **continuous prediction market** for HBAR/USD prices.

Users bet HBAR on a **price range** for a **specific future timestamp**. When that time comes, the final price is manually resolved, and winners share the losers' HBAR proportionally to their **stake** and **bet quality**. Bets are **resolved daily** for simplicity purposes and reward pool calculation.

Actions

1. Place your bet (any future timestamp)

- Predict a price range (**minPrice** – **maxPrice**) for HBAR at a specific future timestamp
- Send your HBAR stake, **0.5% protocol fee** is deducted
- Your prediction is recorded and publicly visible
- Inputs:
 - **targetTimestamp** (must be in the future)
 - **priceMin, priceMax** (must be valid range)
 - HBAR stake (**msg.value**)
- Events:
 - **BetPlaced, FeeCollected**

2. Wait for resolution

- An admin (trusted account or script) posts the final HBAR price for each bet after the target timestamp passes, once per day
- Input (for every bet, which **targetTimestamp** is within that day):
 - **BetID**
 - Final price (manual)
- Events:
 - **BetResolved**

3. Claim your winnings (after all bets are resolved within a day)

- If the final price is within your predicted range, you win!
- The total HBAR staked by losers is **distributed proportionally among winners** based on their score and bet quality
- Input:

- BetID
- Output: Transfers proportional winnings to bettor.
- Events:
 - PayoutClaimed

1 2 3 4 Scoring

Quality of bet calculated when placed:

$$\text{quality} = \text{sharpnessMultiplier} \times \text{timeMultiplier}$$

- **Sharpness:** Narrower ranges earn more $((\text{maxPrice} - \text{minPrice}) / \text{currentPrice} * 100\%)$

Sharpness	>40%	20..40%	10..20%	5..10%	2..5%	0..2%
Quality multiplier	0.1x	0.3x	0.5x	1x	1.5x	2x

alternative calculation fixes **currentPrice** at **0.15** (changed for the Ascension phase from the original 0.3 at Origins phase) for simplicity purposes.

- **Lead time:** Earlier bets earn a bonus

Lead time	1..2h	2..4h	8..24h	1..2d	2..4d	>4d
Quality multiplier	0.1x	0.3x	0.5x	1x	1.5x	2x

E.g. a **0.26 .. 0.28** range bet at 0.27 price, placed **1 day** in advance scores **quality = 1**

Rewards

Rewards to winners are distributed proportionally to stake and bet quality within 1 day window:

$$\text{payout} = (\text{stake} \times \text{quality}) / \sum (\text{stake} \times \text{quality}) \times \text{allBets}$$

Where allBets is the amount of all bets (losing and winning) within that day.

- **Stake:** Larger stakes = larger payout share

E.g. three winning bets (stake, quality) payouts, given **200** reward pool on that day:

1. (10, 1) yields 26.67 payout, or **16.67** as net win
2. (5, 3) yields 40.00 payout, or **35** as net win
3. (100, 0.5) yields 133.33 payout, or **33.33** as net win