

Exhibit 4

Bitnomial Exchange, LLC Hashrate Futures Settlement Price Methodology

The Hashrate Futures Settlement Price Methodology, described in the document herein, is calculated by Bitnomial Exchange, LLC (the “Exchange”) for the purpose of futures contract final settlement. Hashrate is inherently denominated in Bitcoin (BTC) and then converted to US Dollars (USD) using the spot price implied by the Exchange’s Bitcoin US Dollar Futures (BUS) curve.

Hashrate Futures price the expected value of one petahash per second of hashing power per day. The metric quantifies how much a miner can expect to earn, in USD, from a specific quantity of hashrate deployed to the Bitcoin network.

The Hashrate conversion from BTC to USD using the spot price derived from the BUS futures curve aims to provide a fair-value price determined by the market. Market participants can precisely manage Hashrate risk in USD *or* BTC at specific points along the forward curve with immediate and transparent access to the underlying BUS pricing market. It is important to note that this price is not anticipated to align precisely with any particular spot price or index as the BUS futures market expresses its own spot price without any external price references.

Hashrate is a function of three Bitcoin blockchain network parameters: network “difficulty”, block “subsidy” or “reward”, and network transaction fees. Spot Hashrate changes with every block mined and may be viewed as a continuously delivering commodity. As such, Hashrate Futures take this into account by using a floating price, whereby the Hashrate settlement price is an average of the blocks for the duration of the contract month. Hashrate futures settlement uses a 144-block moving average to account for transaction fee variance. Fees exceeding 500-standard deviation moves, which may be adjusted at the discretion of the Exchange, are excluded from the average fee calculation to limit impact of extremely erroneous or non-competitive fees. Non-public blockchain transactions are also excluded to prevent non-competitive fees impacting the average fee rate.

1. The Luxor Bitcoin Hashrate Methodology defines Hashrate as:

$$HP_{btc} = \frac{SR_{btc} + \text{Avg}(TXF_{btc})}{D} \times \frac{1}{2^{32}} \times 10^{15} \times 86400 \times \frac{1}{10^8}$$

SR_{btc} : Block Subsidy Rate, in satoshis

TXF_{btc} : Sum of Transaction Fees, in satoshis for previous 144 blocks

$\frac{1}{2^{32}}$: probability of a hash producing a valid block

D : Network Difficulty, as a multiple of minimum difficulty

10^{15} : Hashes per petahash

86400 : Seconds per day

10^8 : Satoshis per bitcoin

2. To convert to a USD denominated price, the BTCUSD price is implied from the Exchange's BUS futures curve as follows:

$$B_s = F_p - \left(\frac{B_{Fp}}{B_{Ft}} \right) \times F_{Pt}$$

B_s : BTC/USD Conversion price

F_p : Pricing contract price

B_{Fp} : Back-Front month spread price

B_{Ft} : Time between front and back month contracts, in days

F_{Pt} : Time to front month expiration, in days

For this calculation, the Exchange has discretion to select the most liquid and most representative of fair value Front and Back month contracts and those legs may not necessarily be consecutive contract months. The Exchange computes each contract month's price according to the contract's settlement price rules.

3. Combined, the resulting USD denominated Hashrate is defined as:

$$HP_{usd} = HP_{btc} \times B_s$$

4. The futures final settlement price is the previous 172,800 15-second sample hashprice samples (the number of 15 second intervals in 30-days, totaling 172,800 Hashrate prices). This constitutes continuous delivery over the contract month, which is defined as the following:

$$HP_{fs} = \frac{\sum HP_{usd}}{172800}$$

5. An example calculation at block height 796573 that occurred on 2023-06-30, is:

$$HP_{usd} = \$77.83 = \frac{625000000 + 21877200.54}{5.06462E + 13} \times \frac{1}{2^{32}} \times 10^{15} \times 86400 \times \frac{1}{10^8} \times (\$30,805 - \frac{\$525}{91} \times 89)$$

625000000 : Block Subsidy Rate, in satoshis

21877200.54 : Transaction Fees, in satoshis, averaged, for previous 144 blocks

$\frac{1}{2^{32}}$: probability of a hash producing a valid block

5.06462E + 13 : Network Difficulty, as a multiple of minimum difficulty

10^{15} : Hashes per petahash

86400 : Seconds per day

10^8 : Satoshis per bitcoin

\$30,805 : Pricing Contract Price

\$525 : Back - Front Month Spread Price

91 : Time between front and back month contracts, in days

89 : Time to front month expiration, in days