Free Guide: How Miners Use Derivatives to Cut Breakeven Costs

A concise, practical playbook for mining operators who want steadier cash flow without giving up upside.

- The core derivatives tools miners actually use (and what each one is for)
- How breakeven levels are modeled under different BTC prices
- Simple example structures and what they protect
- Common mistakes miners make when hedging

Important: This is educational material, not financial advice. Execution, collateral, counterparty risk, tax/accounting treatment, and jurisdictional rules matter. Always validate structures with your legal, accounting, and risk teams.

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What miners are really hedging

Most mining operations are effectively **long BTC** with a cost base that is largely **fiat-linked** (power, hosting, payroll) and a revenue stream that is **BTC price x BTC production**. The two risks that usually drive hedging decisions:

- **Price risk:** BTC drops while costs stay fixed - cash burn accelerates.
- **Production risk:** realized BTC production differs from the plan (hashrate uptime, pool luck, difficulty changes, curtailment).

A practical objective

Hedging for miners is rarely about maximizing profit. It is about **keeping the lights on**: reducing the BTC price needed to cover cash costs (cash breakeven), stabilizing debt service, and buying time through drawdowns.

> **Rule of thumb:** hedge the portion of expected production required to cover non-negotiable cash outflows (power + hosting + debt service), and leave the remainder more exposed to upside.

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Core derivatives miners actually use

Tool	What it does	What it protects	Typical miner use-case
Forwards / Futures (sell BTC)	Lock a future sell price for BTC on a defined volume and tenor.	Downside in BTC price on the hedged volume.	Cover power + debt service for the next 1-6 months.
Options: Protective Put	Pays out if BTC falls below a strike (creates an effective price floor).	A floor while keeping upside above the strike.	Budget certainty with upside participation.
Options: Collar (Put + Call)	Buy a put for downside; fund part/all of the premium by selling a call (caps upside).	Downside protection with reduced premium outlay.	Low/near-zero cost protection when premium budget is tight.
Put Spread	Buy a put; sell a lower-strike put to reduce premium.	Cheaper floor, limited protection below the lower strike.	Protect moderate drawdowns at lower cost.
Basis / Calendar hedges (roll management)	Manage differences between spot and the derivatives curve; plan rolls.	Reduces curve and roll surprises.	Avoid 'set-and-forget' hedge drift over time.

Don't skip this: Derivatives change cash flows but introduce operational requirements (margin, collateral, limits, reporting). A hedge that saves you in a drawdown can still fail if margining isn't planned.

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Modeling breakeven under different BTC prices

A simple model is enough to make better decisions than gut-feel. Start with a cash view (not accounting profit):

$$\text{Daily cash breakeven BTC price} \approx \frac{\text{Daily cash costs}}{\text{Expected BTC mined per day}}$$

Daily cash costs usually include:

- Power (net of curtailment credits), hosting/colocation fees
- Payroll and core overhead (keep it conservative, not optimistic)
- Debt service / equipment lease payments
- Pool fees, insurance, essential maintenance

Expected BTC per day can be modeled as:

$$\text{BTC/day} \approx \frac{\text{Your hashrate}}{\text{Network hashrate}} \times (\text{Blocks/day}) \times (\text{Block reward} + \text{avg fees})$$

Production is stochastic day-to-day, so use a range (base / low / stress).

Worked example (illustrative inputs)

Your hashrate	200 PH/s
Efficiency	25 J/TH
Power draw (approx.)	5.0 MW
Power price	$0.050 / kWh
Power cost per day	$6,000
Other cash costs per day	$2,000
Total daily cash costs	**$8,000**

Assumed network hashrate	600 EH/s
Assumed reward + fees	3.425 BTC/block
Expected BTC per day	0.164 BTC
Cash breakeven BTC price	**$48,662**

This breakeven is **not fixed**. Difficulty, uptime, pool luck, fees, curtailment, and power rates shift it. Your hedge should be sized to a **stress production case**, not the most optimistic one.

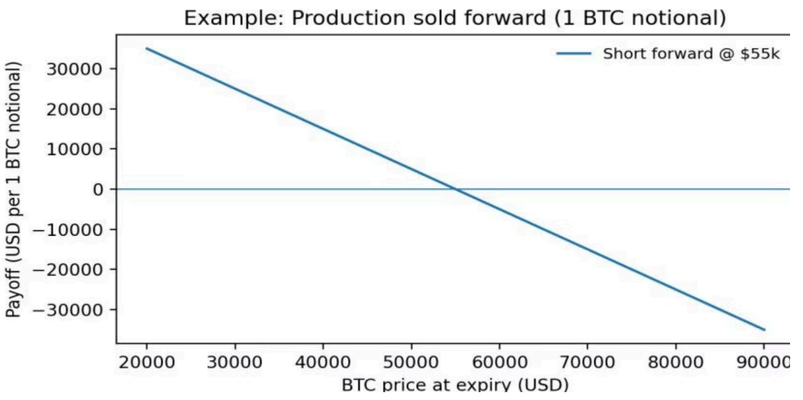
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Simple structures and what they protect

These are the three most common patterns used by mining operators. Apply them to a portion of expected production (e.g., 25% to 75%) depending on debt covenants, liquidity, and risk appetite.

A) Sell production forward (forwards/futures)

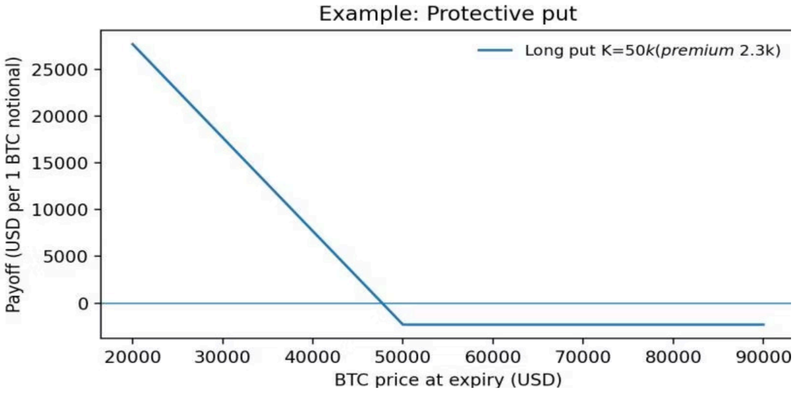
You agree today on a future BTC sale price. This converts uncertain future revenue into a known cash amount (on the hedged volume).



What it protects: A price drawdown on the hedged BTC. **Trade-off:** You give up upside on that portion. **Operational note:** Futures often require daily margining - plan liquidity for adverse moves.

B) Protective put (downside floor + keep upside)

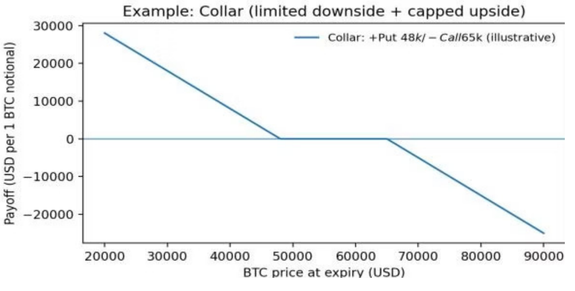
You pay a premium for the right to sell BTC at a strike price. This creates a floor while leaving upside intact above the strike.



What it protects: Sharp downside moves. **Trade-off:** Premium spend (like insurance). **Best when:** You want survival protection but still want to participate in rallies.

C) Collar (floor funded by capping upside)

A collar combines a long put (floor) with a short call (cap). Premium from the call can partially or fully pay for the put.



What it protects: Downside below the put strike on the hedged volume. **Trade-off:** Upside is capped above the call strike. **Best when:** You need protection but premium budget is tight.

Worked cash-flow impact (simplified)

BTC price	Unhedged rev/day	Hedged rev/day	Cash costs/day	Net cash/day
$35,000	$5,754	$7,398	$8,000	-$602
$45,000	$7,398	$8,220	$8,000	$220
$55,000	$9,042	$9,042	$8,000	$1,042
$65,000	$10,686	$9,864	$8,000	$1,864

Interpretation: In low-price scenarios, the hedge raises revenue on the hedged volume and can reduce the BTC price needed to stay cash-flow positive. In high-price scenarios, the hedge underperforms spot on that volume (because you sold forward).

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Common mistakes miners make when hedging

Hedging 100% of expected production

Sounds safe, but production and difficulty vary. Over-hedging can force you to buy BTC in the market to deliver/settle.

Ignoring margin liquidity

Futures can be 'right' long-term but still trigger margin stress short-term.

Setting hedge size from best-case production

Size to a realistic downside production case (uptime + difficulty + curtailment).

No governance

Who can trade, limits, counterparties, and what happens during a drawdown should be written down before it matters.

Confusing P&L with cash

Accounting gains don't pay the power bill; model cash flows and collateral movements.

Set-and-forget rolling

Maturities expire. Roll plans (timing, sizing, curve) must be defined up front.

A simple hedge implementation checklist

- Define the objective: cover power? cover debt service? cap worst-month cash burn?
- Build a 3-scenario model: base / low production / stress BTC price.
- Choose hedge ratio and tenor (e.g., 3 months; 25-75% of expected production).
- Pick instrument: futures vs puts vs collars (cost vs upside vs margin).
- Plan collateral: how much margin can you post without disrupting operations?
- Define governance: approvals, limits, counterparties, reporting cadence.
- Document roll rules and triggers (e.g., when breakeven rises above a threshold).

> **Where expert help pays for itself:** sizing hedges under production uncertainty, structuring option overlays to match debt covenants, managing basis/roll costs, and designing collateral workflows so you don't get margin-stressed at the worst time.

If you want a fast, operator-focused hedge plan, the usual starting point is a 60-90 minute working session on: cost stack, production range, debt constraints, liquidity/margin capacity, and a 3-structure comparison with clear trade-offs.

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