

FARMGOD

Curtailment Setup & Usage Guide

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CHAPTER ONE

Curtailment, In Depth - How It Works

Curtailment automatically slows or stops mining in response to conditions you define, bringing miners back once they improve. Every decision comes down to two choices: a **Strategy Mode** decides *when* it triggers, and a **Curtailment Scope** decides *which miners* it affects and *how* — Per Model/FW Threshold adds a third layer, letting different hardware react differently to the same trigger, covered next after this chapter's switches.

Enable Curtailment & DryRun

Enable Curtailment CHECKBOX

The master switch. Turning it off stops FARMGOD from managing curtailment for this location at all, going forward — the engine simply stops looking at this location on its next pass.

DryRun? CHECKBOX, DEFAULT ON

Runs the engine exactly as configured — same Strategy Mode, Scope, thresholds and timing — but sends nothing to any miner: nothing is stopped, throttled or restarted, and no per-miner notes are written. Every event it *would* have fired is recorded in the Event Tracker instead, so you can check timing and targets before going live. Turn it off once you trust the settings: saving curtailment live — enabled with DryRun off — asks you to confirm first.

TURNING CURTAILMENT OFF WHILE MINERS ARE CURTAILED

If any miners are still actively curtailed when you disable this and hit Save, FARMGOD asks what to do with them: **recover them now**, or **leave them stopped/curtailed**. Nothing brings them back automatically otherwise — full detail in *Safety, Confirmations & Recovery*, later in this guide.

READING DRY-RUN RESULTS

Dry-run events show up in the Event Tracker with **/ DryRun** after the reason — for example **Cron Active / DryRun**. **TARGETED** is how many miners would have been acted on; **EXECUTED**, **FAILED**, **FOLLOW-UPS** and both **BEFORE** columns show —, since nothing ran. When the trigger clears, a simulated recovery is recorded for the same miners. Per Model/FW Threshold on a price-driven mode tracks each model/firmware group it would have curtailed and records the group's recovery once its Start threshold is crossed — the same steps a live run takes. Dry-run events never count toward billing or Executive statistics.

LET A TEST WINDOW FINISH

Switching DryRun off (or back on) in the middle of a window leaves that dry-run window without its recovery row. FARMGOD adds it with the next dry-run recovery it records — timestamped when it's recorded, not when the window actually ended. Let a test window run to its end before switching.

Trigger, Then Recover: The Hysteresis Gap

Every threshold-driven mode — Electricity Price, Bitcoin Price, and Hashprice — asks for *two* values, not one: a **stop** trigger and a separate, more favorable **start** trigger. Mining stops once conditions cross the stop line, and doesn't resume until they've moved clearly past the start line — not the instant they touch it again.

WHY THE GAP MATTERS

Say your Electricity Price strategy stops mining above \$0.08/kWh and resumes below \$0.06/kWh. Without that gap, a price hovering right at \$0.08 would flip your fleet on and off every few minutes — hard on hardware. The gap is why Stop and Start are separate fields. Inside the gap nothing changes: running miners keep running, curtailed ones stay off. With Per Model/FW Threshold, CALCULATE BREAK-EVEN and AUTO UPDATE set it for you around each model's break-even, as wide as the MARGIN $\pm\%$ you choose: by default Stop 5% above, Start 5% below.

Staggered Start Delay DROPDOWN

Spreads out how quickly miners are brought back online after curtailment ends, instead of every miner restarting at the exact same instant — easier on your electrical infrastructure, and on any breaker or transformer that has to absorb the inrush. A warning icon appears if you've set this to "Disabled." The delay applies within each DeviceSet, so on large sites see *Large Fleets: Throughput & Recovery Ramp* in Chapter Six.

CHAPTER TWO

Strategy Modes

Strategy Mode is the first choice you make — it decides what condition FARMGOD watches to trigger curtailment. Five modes are available; exactly one is active per location at a time, chosen from the **Strategy Mode** dropdown. The rest of the Curtailment tab changes to match whichever one you pick.

Manual

A fixed fleet-wide on/off switch — no automatic trigger evaluates it.

Continuously holds the whole fleet fully off or fully on (via Scope) until you change it — no price, schedule, or hashprice signal is evaluated. Not passive or API-driven; see Custom API-Driven Curtailment for that.

The screenshot shows the FARMGOD interface with the 'CURTAILMENT' tab selected. The 'STRATEGY CONFIGURATION' section displays 'Automation is disabled (Manual-Mode)'. The 'ADDITIONAL SETTINGS' section shows 'Curtailment Scope' set to 'Turn Off All Machines' with an 'Efficiency Limit' of 21.5, 'Impact Preview' of 1 Unit, and 'Est. Savings (Today)' of \$0.00 / \$0.09. The 'Recovery Buffer' is set to 1.0 and 'Staggered Start Delay' is 0.25 Sec. A 'SAVE CONFIGURATION' button is at the bottom.

Scheduled

A fixed daily on/off time, independent of any live market or grid data.

Farm Timezone **DROPDOWN, REQUIRED**

The timezone your schedule's stop/start times are interpreted in. Get this wrong and curtailment fires at the wrong wall-clock hour — worth double-checking against your actual site.

Stop / Start Mining **CRON TIME, E.G. 0 8 * * ***

Two simple time expressions deciding when mining stops and when it resumes each day. An "AI Build" helper button can construct these for you in plain language if you have a Gemini API key configured under AI Audit.

The screenshot shows the FARMGOD interface with the 'CURTAILMENT' tab selected. The 'STRATEGY CONFIGURATION' section displays 'Time-of-Use Schedule' with 'Stop Mining (Cron)' set to '45 08 * * *' and 'Start Mining (Cron)' set to '00 11 * * *'. The 'ADDITIONAL SETTINGS' section shows 'Curtailment Scope' set to 'Per Model/FW Action' with 'Configured' 5/6, 'Combiner' 8, and 'Status Ready'. The 'Recovery Buffer' is set to 1.0 and 'Staggered Start Delay' is 0.25 Sec. A 'SAVE CONFIGURATION' button is at the bottom.

NO PRICE THRESHOLD, BUT STILL PER-MODEL REFINEMENT

Scheduled mode has no Stop/Start value to tune per hardware type — the clock triggers everyone alike. You can still customize the *action* per hardware combination via Per Model/FW — full Shutdown for one model, a gentler Power Mode drop for another.

Electricity Price Threshold

Triggers off a live grid price feed.

Grid Provider DROPDOWN

Currently supports **ERCOT** (Texas). Selecting it unlocks a Location dropdown for the specific settlement hub or load zone closest to your site.

Location DROPDOWN, REQUIRED

The ERCOT hub or load zone the live price feed tracks: **HB_BUSAVG**, **HB_HOUSTON**, **HB_HUBAVG**, **HB_NORTH**, **HB_PAN** (Panhandle), **HB_SOUTH**, **HB_WEST**, or the load zones **LZ_HOUSTON**, **LZ_NORTH**, **LZ_SOUTH**, **LZ_WEST**, **LZ_AEN** (Austin Energy), **LZ_CPS** (San Antonio), **LZ_LCRA** (Lower Colorado), and **LZ_RAYBN** (Rayburn). Pick whichever is closest to your actual meter — hubs and zones can diverge meaningfully in price, especially during congestion.

Stop Above / Start Below \$/KWH STEPPER

Mining stops once the live price rises above your Stop value, and resumes once it drops back below your (lower) Start value. A live current-price readout sits next to the fields.

The screenshot shows the 'CURTAILMENT' tab in the FARMGOD interface. The 'PROVIDER & STRATEGY' section has 'Enable Curtailment' checked and 'Strategy Mode' set to 'Electricity Price Threshold'. The 'GRID PROVIDER' is 'ERCOT (Texas)' and the 'Location' is 'LZ_WEST (West Load Zone)'. The 'STRATEGY CONFIGURATION' section shows 'Strike Price Settings' with 'Stop Mining Above' at USD 0.050, 'Start Mining Below' at USD 0.045, and a 'Current Price' of \$0.0381. There are also 'Demand Response' and '4CP' settings. The 'ADDITIONAL SETTINGS' section includes 'Curtailment Scope' (Turn Off All Machines), 'Efficiency Limit' (21.5), 'Impact Preview' (1 Units, 0.04 kW, \$0.00 / \$0.09), 'Recovery Buffer' (1.0), and 'Staggered Start Delay' (0.25 Sec). A 'SAVE CONFIGURATION' button is at the bottom.

ERCOT PRICES CAN GO NEGATIVE

During oversupply — heavy wind or solar with soft demand — ERCOT prices can go negative: the grid pays consumers to take power. The strike-price field is deliberately left unclamped so you can set a negative Start value. See [ERCOT Strike-Price Arbitrage](#) in the Appendix for a worked example.

Bitcoin Price Threshold

Triggers off the live BTC/USD market price instead of a grid feed.

Stop / Start \$ STEPPER

Same stop-then-recover idea as Electricity Price, but triggered by the live BTC price — useful if you'd rather curtail during unfavorable market conditions than grid conditions, or don't have a supported grid provider for your site.

The screenshot shows the 'CURTAILMENT' tab in the FARMGOD interface. The 'PROVIDER & STRATEGY' section has 'Enable Curtailment' checked and 'Strategy Mode' set to 'Bitcoin Price Threshold'. The 'GRID PROVIDER' is 'ERCOT (Texas)' and the 'Location' is 'Choose'. The 'STRATEGY CONFIGURATION' section shows 'Bitcoin Price Settings' with 'Stop Mining (\$/USD)' at USD 60000, 'Start Mining (\$/USD)' at USD 65000, and a 'Current Price' of \$78,425. There are also 'Demand Response' and '4CP' settings. The 'ADDITIONAL SETTINGS' section includes 'Curtailment Scope' (Turn Off All Machines), 'Efficiency Limit' (21.5), 'Impact Preview' (1 Units, 0.04 kW, \$0.00 / \$0.09), 'Recovery Buffer' (1.0), and 'Staggered Start Delay' (0.25 Sec). A 'SAVE CONFIGURATION' button is at the bottom.

Hashprice Threshold

Triggers off hashprice — BTC price and network difficulty combined into one number.

Stop Below / Start Above \$/PH STEPPER

Curtails when the going rate for hashpower falls below your threshold, and resumes once it recovers above a higher one.

Hashprice reacts to both price and network difficulty, so it can trigger even on a flat BTC price if difficulty climbs enough to make mining less rewarding per unit of hashrate.

The screenshot displays the 'CURTAILMENT' tab in the FARMGOD interface. It is divided into three main sections: PROVIDER & STRATEGY, STRATEGY CONFIGURATION, and ADDITIONAL SETTINGS.

- PROVIDER & STRATEGY:** Includes an 'Enable Curtailment' checkbox, a 'DryRun?' checkbox, and a 'View Dashboard' button. The 'Strategy Mode' dropdown is set to 'Hashprice Threshold'. Below this, there are fields for 'Grid Provider' (set to 'ERCOT (Texas)') and 'Location' (with a 'Choose' button).
- STRATEGY CONFIGURATION:** Features 'Hashprice Settings (\$/PH)' with 'Stop Mining Below' set to 'USD 32' and 'Start Mining Above' set to 'USD 35'. The 'Current HP' is displayed as '\$38.81'. There are also 'Demand Response' and '4CP' toggle switches, both currently set to 'Enable'. A note at the bottom states: 'ERCOT pulling active (5m) / DR and 4CP overrides take priority over other strategy settings!'.
- ADDITIONAL SETTINGS:** Includes a 'Curtailment Scope' dropdown set to 'Turn Off All Machines'. Below this is an 'Impact Preview' table showing 'Efficiency Limit' (WITH 21.5), 'Impact Preview' (1 Units), and 'Est. Savings (Today)' (\$0.00 / \$0.09). There are also 'Recovery Buffer' (WITH 1.0) and 'Staggered Start Delay' (0.25 Sec) settings.

A 'SAVE CONFIGURATION' button is located at the bottom of the interface.

CHANGING STRATEGY WHILE CURTAILMENT IS ACTIVE

Changing Strategy Mode or Curtailment Scope while curtailment is in effect on some miners asks you to confirm first — switching re-evaluates every miner immediately, and some may recover while others stay curtailed. See [Safety, Confirmations & Recovery](#) for the full behavior.

CHAPTER THREE

Curtailment Scope

Once a Strategy Mode decides curtailment should trigger, Curtailment Scope decides which miners are affected and how. Four scopes are available from the Curtailment Scope dropdown: Turn Off All Machines, Global Efficiency Threshold, Power Cap, and Per Model/FW Threshold.

Scope	What it does	Key setting
Turn Off All Machines	Stops the entire fleet at once	— none —
Global Efficiency Threshold	Stops only the least-efficient SHA256 miners	Efficiency Limit (W/TH)
Power Cap	Stops just enough miners to hit a total power target	Power Cap (kW)
Per Model/FW Threshold	Separate trigger and action per hardware/firmware combo	Per-row thresholds & actions

Turn Off All Machines

The simplest option: when the Strategy Mode's condition triggers, every miner at the location stops. No efficiency ranking, no power target to calculate — all or nothing. Recovery Buffer and the Impact Preview don't apply here, since there's no partial state to fine-tune.

Global Efficiency Threshold

Efficiency Limit NUMBER, W/TH

Only your least-efficient SHA256 miners are stopped — anything running worse (higher W/TH) than this limit — instead of the whole fleet. An Impact Preview next to it estimates how many miners and how much power this would currently affect, plus an estimated savings-per-hour/day based on your local electricity price.

Recovery Buffer NUMBER, W/TH

A safety margin a stopped miner's efficiency must clear before it's allowed back on. With a limit of 20 W/TH and a buffer of 1.0, a miner only recovers once it would run at 19.0 W/TH or better — the same hysteresis idea as the price-based modes, applied to efficiency instead of price. A tooltip on the field shows the exact recovery number this produces.

EFFICIENCY IS EVALUATED LIVE

The W/TH checked against your limit and Recovery Buffer is the miner's current, real-time efficiency — not a static spec-sheet number. Efficiency drifts with die temperature, ambient conditions, and other live factors, so the same miner can cross the recovery line purely from cooling down, independent of any change to hashrate or power draw.

Power Cap

Power Cap NUMBER, KW

Stops just enough miners — starting with the least efficient — to bring total power draw under this target, rather than targeting an efficiency number directly. Useful for a hard interconnect or demand-charge limit. The same Impact Preview shown for Global Efficiency Threshold applies here too.

Target Selection DROPDOWN

Decides which miners are chosen first when the scope needs to shed load to get under the power cap — by default, "Least efficient first," so the worst W/TH machines stop before more efficient ones. Switching this only changes which ASICs get picked, not the power target itself.

Per Model/FW Threshold & Actions

The most granular scope: every hardware/firmware combination gets its own row, trigger, and action. Scheduled shows a simpler Action-only screen; price-driven modes show the full threshold screen below — Electricity Price left, Hashprice right, swapped since a price spike is bad but a hashprice drop is bad.

ELECTRICITY PRICE MODE — STOP ABOVE / START BELOW

HASHPRICE MODE — STOP BELOW / START ABOVE

Columns: Model · FW · ASICs · Mode SHOWN IN BOTH SCREENS

Every row is one model/firmware combination present at this location: the model name, its firmware (or "Stock" if unmodified), how many ASICs of that combination are running, and a Mode dropdown choosing what happens to that combination when curtailment triggers.

Mode: Skip / Shutdown / Power (Low/Norm) / Power (Low/High) SHOWN IN BOTH SCREENS

Skip excludes that combination from this scope entirely. **Shutdown** and **Power Mode** only appear if that model/firmware is verified to support them; unsupported rows show "No verified action support" (Skip only), and powermode-only rows are marked "Powermode only."

Stop / Start Threshold **SHOWN FOR PRICE-DRIVEN MODES ONLY**

For Electricity Price, Bitcoin Price, and Hashprice modes, each row gets its own Stop/Start pair — the screen is titled "Per Model/FW Threshold." Scheduled mode has no threshold to set per row (the clock is the shared trigger), so the same screen instead shows just the Mode column and is titled "Per Model/FW Action."

Calculate Break-Even / Auto-Calculate **BUTTON, PRICE-DRIVEN MODES ONLY**

Fills Stop/Start for every row not on Skip from each model's efficiency — the live average W/TH of its miners, or its spec — against the current market, using the MARGIN $\pm\%$ next to the button. **CALCULATE BREAK-EVEN** (Electricity Price) sets Stop that margin above and Start that margin below the model's break-even power price. **AUTO-CALCULATE** sets Stop that margin below and Start that margin above the model's break-even hashprice (Hashprice) or BTC price (Bitcoin Price, rounded to \$100). A one-time starting point you can still adjust row by row.

MARGIN $\pm\%$ **STEPPER, PRICE-DRIVEN MODES ONLY**

How far Stop and Start sit from break-even, for CALCULATE BREAK-EVEN, AUTO-CALCULATE and AUTO UPDATE. Each mode keeps its own value, saved with APPLY: 5% for Electricity Price, 3.75% for Hashprice and 0.7% for Bitcoin Price by default, in 0.1% steps from 0.1% to 50%. A wider margin means fewer switches and a wider hysteresis gap; a narrower one follows break-even more closely.

AUTO UPDATE **CHECKBOX, ELECTRICITY PRICE MODE ONLY**

Keeps every SHA-256 row at its break-even as the market moves. Every 15 minutes FARMGOD recalculates Stop (break-even + margin) and Start (break-even – margin) from the current hashprice, the location's break-even inputs (below) and the model's measured efficiency: the median W/TH of its online, hashing miners; while the whole group is curtailed, its last measured value; failing that, its spec. Ticking the box fills the rows at once, and while it's ticked a changed MARGIN shows in the list right away; APPLY saves both for the location, with an update within a minute. While it's on, those rows' Stop and Start are read-only, and a line above the buttons shows the last run, the hashprice it used and the location's adder and fees.

WHY AUTO UPDATE

Hashprice follows the BTC price and network difficulty, so a break-even threshold that's right today is off within days. AUTO UPDATE moves each pair with it. Each run moves the measured part — hashprice and efficiency — by at most 10% and skips changes under 1%, so one bad reading can't swing your thresholds; a new margin or new Location economics apply in full within a minute. Without a current hashprice nothing changes. Rows of other algorithms keep the values you set.

Break-Even Inputs **SETTINGS > LOCATION > ECONOMICS**

Break-even is more than hashprice against the power price. CALCULATE BREAK-EVEN and AUTO UPDATE also take three values set per location: the **Energy Adder** (\$/MWh you pay on top of the market price — delivery, transmission, fees), the **Revenue Share** (% of mining revenue that goes to a partner) and the **Pool & Dev Fee** (% taken by the pool plus your firmware's dev fee). AUTO-CALCULATE takes the share and the fee too, but no adder: it works from the DeviceSets' Price/kWh, which is already all-in. The LOCATION tab previews the break-even of its SHA-256 miners as you type.

The screenshot displays the 'LOCATION' settings interface in FARMGOD. The 'ECONOMICS' tab is active, showing various input fields for configuring the break-even calculation. The 'Location Name' is set to 'BUILDING_A'. The 'Price per kWh' is 0.045, and the 'Currency' is USD. The 'Energy Adder (\$/MWh)' is set to 15. The 'Revenue Share (%)' is 0, and the 'Pool & Dev Fee (%)' is 1. A summary line at the bottom of the economics section shows: 'Break-even \$63.43/MWh at \$40.18/Ph/day - 7 miners - 21.1 J/TH'. The 'Weather & Geo Settings' section shows 'Weather Latitude' as 30.59 and 'Weather Longitude' as -99.42, with a map of the location. A 'SAVE CONFIGURATION' button is located at the bottom of the page.

FORMULA

break-even (\$/MWh) = hashprice (\$/PH/day) × (1 – revenue share – pool & dev fee) × 1000 ÷ (W/TH × 24) – energy adder (\$/MWh)

Example: 21 J/TH at a hashprice of \$40/PH/day is \$79.37/MWh before fees; with a 1% pool & dev fee and a \$15/MWh adder, break-even is $79.37 \times 0.99 - 15 = \textbf{\$63.57/MWh}$, so with a 5% margin Stop is \$66.75/MWh and Start \$60.39/MWh — 0.0668 and 0.0604 in the dialog's \$/kWh.

WHY GO THIS GRANULAR

A location often mixes efficient, newer ASICs with older, less efficient ones. Per Model/FW Threshold lets the older hardware curtail earlier — or more aggressively, full Shutdown instead of a Power Mode drop — while your best machines keep running longer into the same price move.

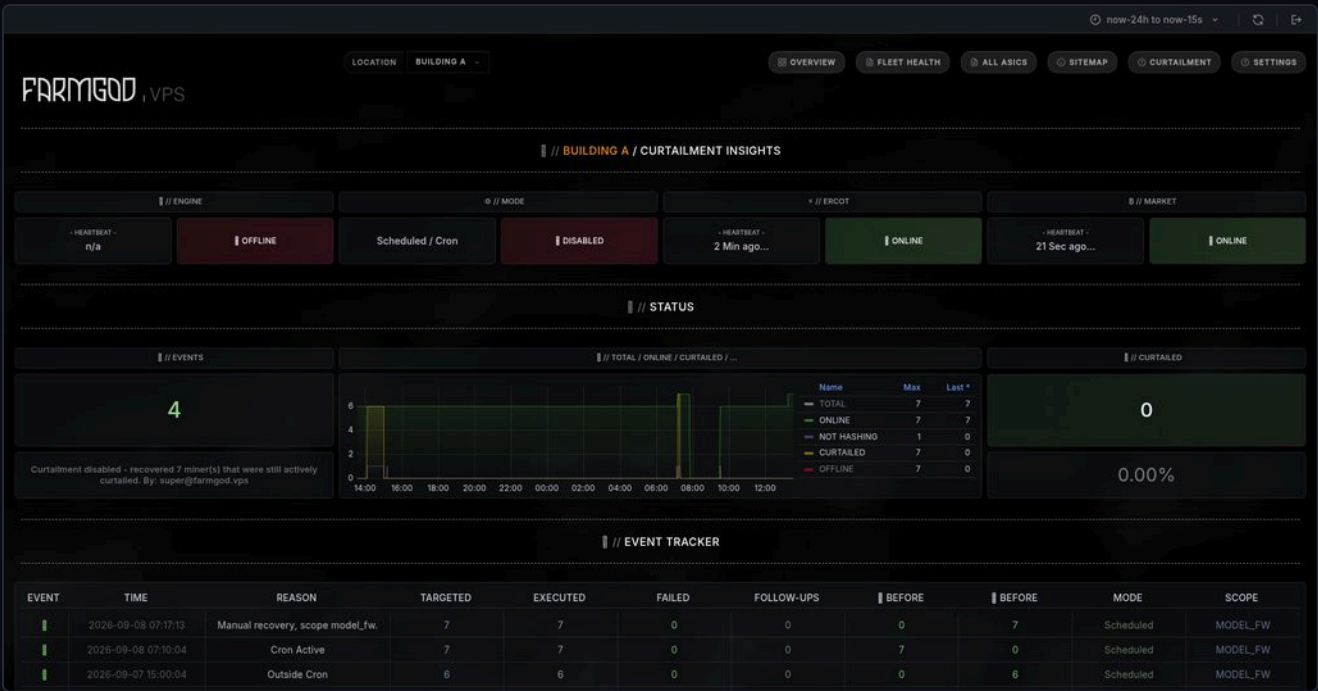
SKIPPING A CURTAILED ROW

Miners of a row you set to Skip, or whose thresholds you clear, while they're curtailed are brought back shortly after you apply: with no Start threshold left to wait for, nothing else would recover them.

CHAPTER FOUR

Monitoring

The **Curtailment** dashboard — separate from the Curtailment settings tab — is where you watch the engine work: live status, current curtailed count, and a full history of every action it's taken.



Status Strip

Four heartbeat-and-status pairs across the top confirm the moving parts behind curtailment are actually alive: the engine itself, the active trigger mode, the ERCOT grid-price feed, and the Bitcoin market-price feed. A stale heartbeat here is usually the first sign something's wrong.

Curtailed Count & Trend

How many miners are curtailed right now, plus what share of the fleet that represents, alongside a trend chart plotting Total, Online, Not Hashing, Curtailed, and Offline counts over time — each with its Max and Last value in the legend — so you can see curtailment events as they happen and how long they lasted. In a dry run, a dashed **Curtailed (DryRun)** line shows how many miners it would have curtailed.

Event Tracker

A full table log of every curtailment action: when it happened, whether it was a shutdown (red) or a recovery (green), at which **LOCATION**, what triggered it (**REASON**), how many miners were **TARGETED**, how many were **EXECUTED** or **FAILED**, how many **FOLLOW-UPS** the engine added while the event was still active (for example miners that came online mid-event), and how many miners were online (the green **BEFORE** column) or already curtailed (the red **BEFORE** column) just before it — plus the **MODE** and **SCOPE** in effect. This is the place to look when you need to explain "why did the fleet curtail at 3pm yesterday."

Events COUNTER

Shows live and dry-run events separately as **LIVE / DRY** for the selected time range, with the most recent event described underneath. Dry-run rows in the table carry **DryRun** after their reason. The dashboard refreshes every minute, so a new event can take up to a minute to appear.

THERE'S MORE DATA THAN WHAT'S ON SCREEN

The Event Tracker shows a summary. Every event is actually logged with far more detail — exact market conditions at trigger time, per-miner retry/failure detail, and individual notes on each miner's own history — reachable via direct database or API access.

Curtailment on the Charts

Every curtailment is drawn as a shaded band on the main charts of the Overview, DeviceSet Detail, ASIC Detail and Curtailment dashboards: **yellow** for a real curtailment, **grey** for a dry run. A band runs from the first shutdown until everything it curtailed is back, so a curtailment in several steps is still one band; one that's still running reaches the right edge of the chart.

Hover a band **TOOLTIP**

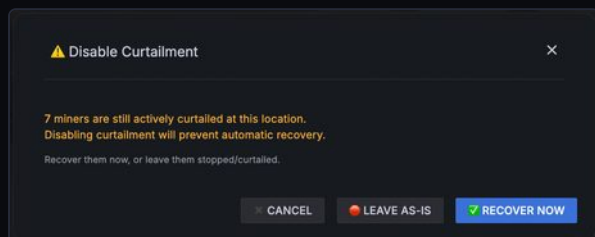
The header gives the time range, the location, the number of shutdown steps, the peak number of miners curtailed at once and the load shed. Below it, one line per step in the dashboard's time zone: ▼ shutdown or ▲ recovery, the value that triggered it and how many miners it covered (live events add ✓ executed and ✗ failed); with Per Model/FW Threshold, the groups with the Stop or Start threshold in effect. With Location set to All, locations curtailed at the same time share one band with a block each. On ASIC Detail the tooltip lists only the steps that included that miner.

CHAPTER FIVE

Safety, Confirmations & Recovery

Curtailment can put real money and real hardware in motion, so FARMGOD gates the riskiest transitions behind an explicit confirmation instead of letting them happen silently.

Disabling While Miners Are Curtailed

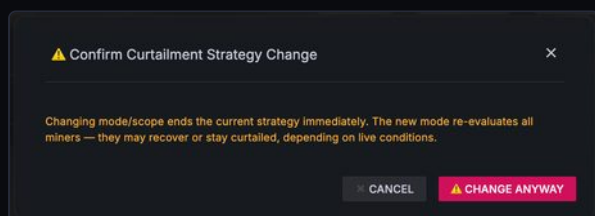


If any miners are still actively curtailed when you turn off Enable Curtailment and hit Save, FARMGOD asks what to do with them: **recover them now**, as part of the same save, or **leave them stopped/curtailed**. This check is evaluated fresh, straight from current miner status, at the moment you click Save — not from whatever the dashboard happened to show last, so it stays accurate even if curtailment triggered only moments earlier.

WHY THIS MATTERS

Once curtailment is disabled, the engine stops evaluating this location on its very next pass — it will never come back on its own to recover miners it previously stopped. "Recover them now" is the only way to guarantee they don't stay stranded indefinitely.

Changing Strategy While Active



Changing the Strategy Mode or Curtailment Scope while curtailment is currently in effect on some miners triggers the same kind of confirmation — switching strategy re-evaluates every miner immediately under the new rules, and some may recover while others stay curtailed depending on live conditions at that instant. Confirming makes the change and lets that re-evaluation happen right away, rather than waiting for the next tick.

Rolling Out & Scaling

Two questions come up before curtailment goes live at a real site: how to try it on part of the fleet first, and how fast a large fleet actually stops and comes back. DryRun answers the first safely; the second depends on settings that are easy to overlook.

Piloting on a Subset of Miners

Curtailment is configured per **location**. Turn Off All Machines, Global Efficiency Threshold and Power Cap always consider every miner at that location, so a pilot on part of the fleet needs one of these two setups:

1

Per Model/FW Threshold, everything else on Skip

Choose Per Model/FW Threshold as the Scope and set every model/firmware row to **Skip** except the ones in the pilot. Works with Scheduled and the price-driven modes; Manual only supports the whole location. The pilot is then every miner of those combinations at the location.

2

A dedicated pilot location

Move the pilot DeviceSets into a location of their own and configure curtailment there, leaving the rest of the site as it is. The pilot location has its own settings, so check its pools and alerts before moving sets into it.

COMPARING AGAINST ANOTHER CURTAILMENT SYSTEM

Run FARMGOD in DryRun while your existing system keeps control, then compare each FARMGOD dry-run row — time, reason, targeted miners — with what the other system actually did in the same window. Use the same grid price point (for example `LZ_WEST`) and the same thresholds on both sides, or the comparison means nothing.

Large Fleets: Throughput & Recovery Ramp

Every DeviceSet has its own action sender on its Kollektor, and all DeviceSets act in parallel. Two settings decide how fast that is:

Action Trigger Concurrency SETTINGS › ON-SITE TOOL

How many miners each DeviceSet works on at once. In **Auto**, the value depends on how many DeviceSets that Kollektor host runs. Because it applies per DeviceSet, the host total is that value times its DeviceSets.

DeviceSets on the host	Auto: miners at once per DeviceSet	Host total, example
1–4	150	4 sets × 150 = 600
5–9	100	9 sets × 100 = 900
10–19	50	19 sets × 50 = 950
20–49	15	20 sets × 15 = 300
50–99	8	50 sets × 8 = 400
100+	5	100 sets × 5 = 500

For large sites, switch to **Manual** (around 25 is a sensible start) so every host behaves predictably, whichever side of a tier boundary it happens to fall on.

Staggered Start Delay APPLIED PER DEVICESSET

Within each DeviceSet, the n -th miner in a recovery waits $n \times \text{delay}$ before it starts. Because every DeviceSet ramps in parallel, the whole site comes back at roughly $\text{DeviceSets} \div \text{delay}$ miners per second — not one miner per delay. Shutdowns are not staggered: shedding load quickly is safe, only the recovery is ramped.

SIZE THE DELAY FOR THE WHOLE SITE

78 DeviceSets at 0.25 s bring back about 312 miners per second — a 25,000-miner site in under two minutes. At 4 s it's about 20 miners per second, and 300-miner DeviceSets take about 20 minutes to recover fully. Work back from what the site's electrical infrastructure can absorb: **delay = DeviceSets ÷ target miners per second**.

DRYRUN TESTS DECISIONS, NOT THROUGHPUT

A dry run sends nothing, so it can't show how long a real shutdown or recovery takes. Test the ramp with a live window on a pilot first. Results are written back in batches, and per-miner notes are only written for failures, so a fleet-wide event doesn't flood miner histories.

CHAPTER SEVEN

Real-World Strategies

Four worked examples, chosen to show the same set of controls used for genuinely different goals — one reacting to live grid pricing, one following a fixed daily rhythm tied to a renewable resource, one tuning each hardware type separately against the Bitcoin market itself, and one bypassing the engine entirely for direct, script-driven control.

Example A — ERCOT Strike-Price Arbitrage



Curtail on live grid price, tuned around your own break-even cost.

A site in ERCOT territory wants to stop mining automatically whenever local power gets more expensive than mining is worth, and resume the moment it's cheap again — without anyone watching a price feed by hand.

1

Strategy Mode

Electricity Price Threshold. Grid Provider: ERCOT. Location: whichever hub/zone actually prices your meter — e.g. `HB_WEST` or `LZ_LCRA`. The wrong zone can diverge from your real price.

2

Set the strike price against your own break-even

Work out your \$/kWh break-even and set **Stop Above** a bit below it — margin, not the exact line. Keep **Start** meaningfully lower (e.g. \$0.08 / \$0.05) to avoid flapping. Whatever you pay on top of the ERCOT price — delivery, transmission, fees — goes into the location's **Energy Adder** (Settings > LOCATION), so break-even is measured against the price the engine actually sees.

3

Choose a scope that matches your risk tolerance

Power Cap tapers total draw to a target, letting part of the fleet keep earning. **Turn Off All Machines** is simpler if you'd rather not choose which miners stay on. **Per Model/FW Threshold** gives each model its own pair around its own break-even, and AUTO UPDATE keeps it there as hashprice moves.

4

Don't skip Staggered Start Delay

ERCOT prices can swing back quickly. Bringing dozens or hundreds of ASICs back online at once is a real inrush event — stagger it.

THE NEGATIVE-PRICE EDGE CASE

High-wind ERCOT zones occasionally see genuinely negative settlement prices — the grid pays consumers to take power. Some operators deliberately set a **negative** Start value so mining resumes specifically during those windows, effectively getting paid to mine.

Example B — Solar-Aligned Scheduled Curtailment



Follow the sun, not a live price feed.

A site paired with on-site solar (or a utility rate that's cheapest during daylight hours) wants mining concentrated in the middle of the day and curtailed overnight — a fixed daily rhythm rather than a live market signal.

1

Strategy Mode

Scheduled. Set Farm Timezone to the site's actual local timezone, or the schedule fires at the wrong wall-clock hour, missing its sunlight window.

2

Set Stop/Start around your solar window

For strong mid-day solar, try **Stop at 19:00** and **Start at 09:00** to concentrate mining in daylight. Adjust to your real production curve — cron doesn't shift with the seasons on its own.

3

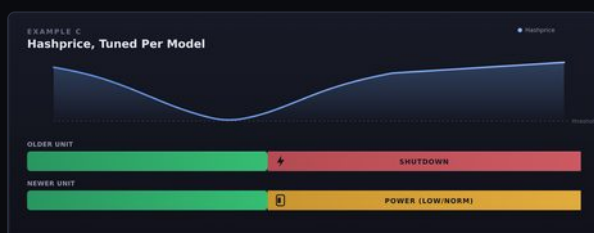
Refine per hardware with Per Model/FW Action

Pairing Scheduled with **Per Model/FW Threshold** still lets each hardware type respond differently — full **Shutdown** for older units, a gentler **Power Mode** drop for newer ones.

NOT JUST FOR BEHIND-THE-METER SOLAR

The same schedule-around-daylight idea works for a site with no solar panels of its own — just a utility rate that's cheapest midday because of grid-wide solar oversupply. Only the reasoning behind the chosen hours changes.

Example C — Hashprice-Driven Per-Model Curtailment



A mixed fleet, tuned unit by unit against the market itself.

A site on a flat electricity rate — no time-of-day pricing to react to — runs an older, less efficient generation of ASICs alongside a newer, more efficient one. The operator wants to curtail automatically when mining stops being worthwhile, but not identically across the fleet: the old units should shut down completely while the efficient ones simply throttle back and keep earning.

1

Strategy Mode

Hashprice Threshold. With no grid price signal worth watching, hashprice (BTC price + network difficulty) reflects whether mining is worth it right now.

2

Scope: Per Model/FW Threshold

Rather than one Stop/Start pair for the whole fleet, this scope gives every model/firmware combination its own row — its own configuration screen too.

3

Set each row's Mode and thresholds

Older units: **Shutdown** with a high Stop Below threshold — off at the first sign hashprice softens. Newer units: **Power (Low/Norm)** with a lower threshold.

4

Start from Auto-Calculate, then hand-tune

Auto-Calculate seeds every row's thresholds from each model's real specs against current hashprice, MARGIN $\pm$ % apart (3.75% by default). Nudge individual rows once you know how that hardware behaves.

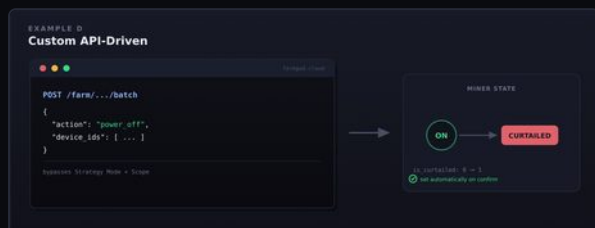
5

Roll it out under DryRun first

With two different actions on two different triggers, watch this in DryRun first — confirm the Event Tracker fires the rows as expected before switching it off.

CHECK VERIFIED SUPPORT BEFORE YOU RELY ON IT

Shutdown and Power Mode are only offered on a row if that model/firmware is verified to support them. Confirm both your old and new hardware rows actually show the action you're planning around before relying on this strategy.

Example D — Custom API-Driven Curtailment

Bypass Strategy Mode and Scope entirely — drive individual miners straight from the FARMGOD API.

None of the four built-in scopes fit every case — an external automation with its own trigger logic, a support workflow curtailing one specific miner, or a one-off test. FARMGOD's `miner` API supports this directly through `action`, settable per miner or in a batch. It trades away the engine's own safety nets for direct control, so it's worth understanding exactly what it does before relying on it.

1

Uncheck Enable Curtailment for that location first

Not "Enabled + Manual" — **Manual** continuously curtails/recovers the *entire* fleet every tick and fights external control. A fully **disabled** location is the safe space.

2

Set `action = "power_off"` (or `"power_on"`) — that's the whole call

`power_off` / `power_on` mark a miner as curtailed, unlike `sleep` / `wake`. Use `PUT /miner/{device_id}` for one, or `POST /farm/{deviceset_id}/batch` for a batch.

3

Recovery is just the same call in reverse

A disabled location stays hands-off in reverse too — nothing auto-recovers a miner curtailed this way. Bring it back with the same call, `action = "power_on"`.

WHAT YOU GIVE UP

No hysteresis, no Impact Preview, no Save-time confirmation dialog, no Staggered Start Delay on recovery. Every safeguard covered earlier in this guide exists inside the engine's own evaluation loop — stepping outside it for direct API control means your own logic is now responsible for all of it. Best suited to an already-audited external system or a deliberate one-off action, not a routine curtailment strategy.

APPENDIX

Curtailment Action Support by Model/Firmware

Which curtailment actions FARMGOD offers for a given model/firmware, pulled directly from the same verified-support data the engine itself checks before acting. A model missing here defaults to Skip for automated curtailment. This is not a complete list of every model FARMGOD supports overall — only those with the specific capabilities curtailment requires.

Model	FW	Power Off	Power On	Set Power Mode
Antminer	Stock (incl. K7)	✓	✓	✓
Antminer	VNish	✓	✓	✓
Antminer	BraiinsOS	✓	✓	✓
Braiins BMM101	BraiinsOS	✓	✓	✓
Antminer	ePIC	✓	✓	✗
ePIC hardware	ePIC	✓	✓	✗
Antminer	MaraFW	✓	✓	✗
Whatsminer	Stock	✓	✓	✓
Whatsminer	FarmGod	✓	✓	✓
Sealminer	Stock	✓	✓	✓
AvalonMiner Avalon Q	Stock	✓	✓	✓
AvalonMiner Mini3	Stock	✓	✓	✗
AvalonMiner Nano3 / Nano3S	Stock	✗	✗	✓
BitAxe Gamma	AxeOS	✗	✗	✓
NerdQAxe	AxeOS	✗	✗	✓

✓ verified ✓ supported, not yet verified on live hardware ✗ not supported

Rows with only **Set Power Mode** can take part in Per Model/FW Threshold with a Power Mode action, but can't be shut down. Not available for curtailment at all: Goldshell, Elphapex and VolcMiner (stop only, no verified resume), BitForge, and BitAxe/AvalonMiner models not listed above.

Support for additional model/firmware combinations is added on an ongoing basis.



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