RESOURCE

Backup Economics Without Pretending Resilience Has One Price

Backup power is sold on peace of mind, which makes it easy to skip the arithmetic. A battery or a generator both have a real, calculable cost, and the value they provide splits into two separate things that are easy to conflate: money saved on your electric bill, and protection from the cost of an outage. Treating them as one number understates the decision.

Battery versus generator on total cost

The battery versus generator total cost engine compares the two head to head on installed cost, maintenance, and fuel over your ownership horizon. Generators typically have a lower upfront cost and a real ongoing fuel cost; batteries have a higher upfront cost and near-zero marginal cost per outage, so the comparison depends heavily on how often and how long you expect outages to last.

Battery value without solar

A battery does not need solar to be useful for backup, though it produces less bill savings on its own. The battery without solar value engine isolates what a standalone battery is worth: mostly resilience, plus whatever rate-arbitrage or demand-charge value your specific utility rate structure allows.

Pricing the outage you are avoiding

The outage cost avoided engine asks you to estimate the real cost of a typical outage for your household: spoiled refrigerated food, a hotel night if the outage is prolonged, lost income if you work from home, or a specific medical-equipment risk. That number, multiplied by your expected outage frequency, is a defensible way to price resilience instead of leaving it as an unquantified feeling.

Finding your own breakeven

The backup option breakeven engine solves for the outage cost or frequency at which a battery or generator purchase clears, given its installed cost and your ownership horizon. If your honest estimate of outage risk falls below that threshold, the purchase is really about wanting insurance beyond what the numbers justify, which is a legitimate reason to buy, but worth recognizing as a different kind of decision than a payback-driven one.

Generator fuel cost adds up faster than expected

A generator's operating cost during an extended outage, especially a multi-day one, can be substantial once fuel and run-time are accounted for realistically. The generator fuel cost over outage engine prices that specific scenario, which is often the piece homeowners underestimate when comparing a generator's low upfront cost against a battery's higher one.

The honest way to frame the decision

Separate the two questions explicitly: what does this option cost versus save on my electric bill, and separately, what is a reasonable dollar value for the outage protection it provides. Add them together only after pricing each on its own, rather than letting a vague sense of "peace of mind" stand in for a number you never actually checked.