RESOURCE

How Financing and Discounting Change a Purchase Decision

Two rates show up throughout RetrofitROI's engines and are easy to confuse: a loan's APR, which is the cost of borrowing money for a purchase, and a discount rate, which is the rate used to convert future savings into today's dollars for an NPV calculation. They serve different purposes and using the wrong one in the wrong place produces a misleading answer.

Financing changes your actual cash cost

The panel upgrade financing impact engine and the envelope financing comparison engine both show the real total cost of financing a project, principal plus interest, against paying cash upfront. A financed project's total cost is always higher than its cash price; the question is whether that premium is worth the flexibility.

Discounting changes how future savings are valued, not what you pay

A discount rate does not change your project's actual cost. It changes how much weight you give to a dollar saved five or ten years from now versus a dollar saved today, when computing NPV. See payback, NPV, and ROI for the fuller explanation of what that produces.

Comparing financing across project types

The battery financing comparison engine, the water heater financing comparison engine, and the EV charger financing comparison engine each apply the same amortized-loan math to their respective project type, so you can compare financing terms consistently across very different purchases.

A financed project can still be worth it

A loan's interest cost reduces total savings but does not automatically make a project a bad idea. If the financed monthly payment is still comfortably below your avoided monthly energy cost, the project produces positive cash flow every month even while you are paying it off, which is a meaningful threshold distinct from total lifetime savings.

Watch for a rate that looks low but isn't

Some promotional financing offers advertise a low headline rate while bundling in a dealer fee or a shorter term that raises the effective cost. Confirm the actual total finance charge each engine reports, not just the entered APR, before treating a financing offer as automatically favorable.

Choosing a discount rate you can defend

There is no single correct discount rate for every household. A reasonable, defensible choice is what you could otherwise safely earn on the cash, or what you would otherwise pay down in interest-bearing debt. Whatever you choose, use it consistently across comparisons rather than picking a favorable rate for one project and an unfavorable one for the alternative you are weighing it against.