HOW AN EV BATTERY IS CHARGED

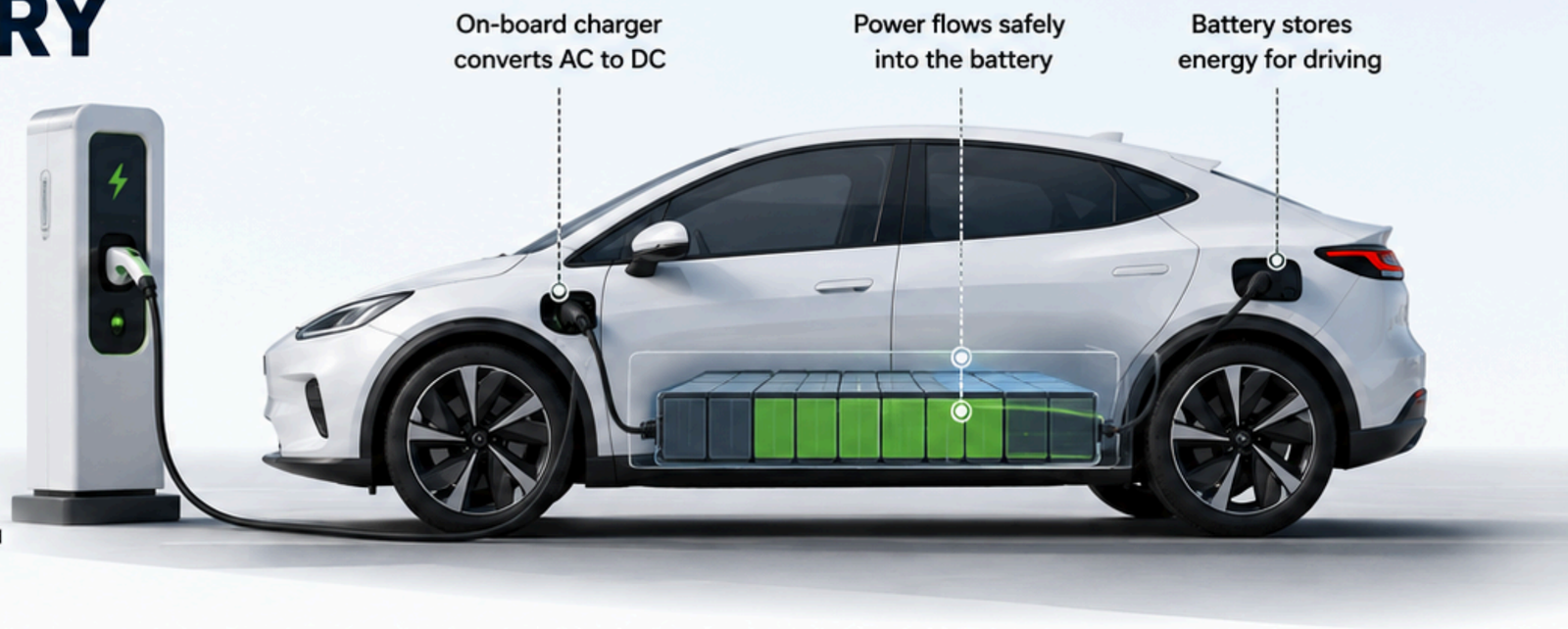
When you plug in your EV, electricity flows from the charger to the on-board charger, which safely delivers it to the battery.

1. POWER SOURCE
Electricity comes from the grid to the charger.

2. CHARGER
The charger sends AC power to your EV.

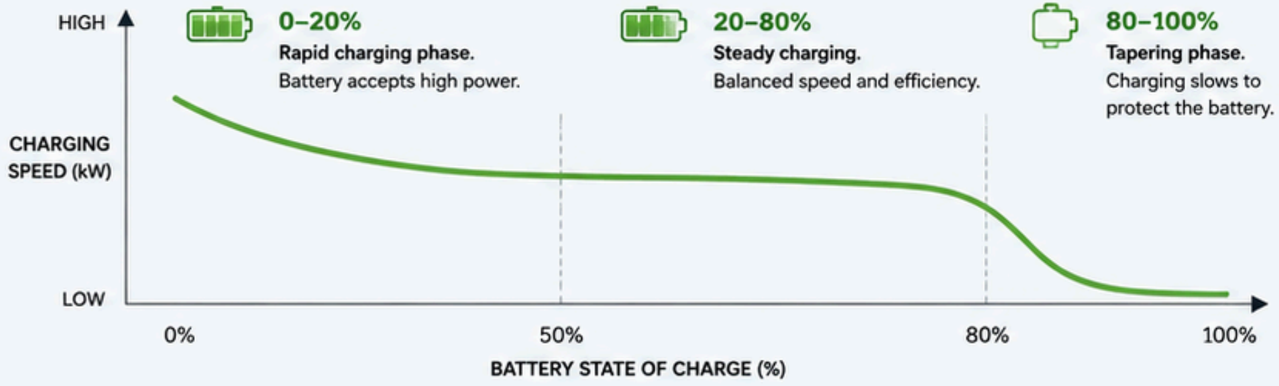
3. ON-BOARD CHARGER
Converts AC to DC and manages safe, efficient charging.

4. BATTERY
DC power is delivered to the battery and stored as energy.



CHARGING SPEED: THE TYPICAL CURVE

Most EVs charge fastest at low battery levels and slow down as they fill up.



0–20%
Rapid charging phase.
Battery accepts high power.

20–80%
Steady charging.
Balanced speed and efficiency.

80–100%
Tapering phase.
Charging slows to protect the battery.

WHY? The battery management system reduces power at higher charge levels to protect cell health, control heat, and ensure safe, long-term performance.

TEMPERATURE MATTERS

Battery temperature has a big impact on charging speed.

COLD BATTERY

Higher internal resistance limits how much power can be accepted.

Slower charging

PRECONDITIONED BATTERY

Ideal temperature allows the battery to accept higher power.

Faster charging

TIP: Preconditioning the battery (heating or cooling before charging) helps you get the fastest, most efficient charge.