

EV Glossary

Battery:	A collection of cells connected in parallel, typically contained in a single case with a single positive/negative terminal pair.
Battery Pack:	A collection of batteries connected in series and/or parallel depending on the desired total capacity and voltage.
Bus Bar:	A highly conductive material (typically copper) used to connect batteries together to create a battery pack. Small applications may simply use thin wire while automotive applications use thick copper plates.
C-Rate:	Defines the charging or discharge rate relative to the battery capacity. Example: A battery with a capacity of 2Ah is charging/discharging at 1C when the current is 2A. To calculate the C-rate, divide the current by the battery capacity. A high C-rate corresponds to a high, relative current.
Capacity:	The amount of energy that can be stored in a single battery or set of batteries (such as a pack), typically measured in mAh (Milliamp-Hour) or Ah (Amp-Hour).
Cell:	The smallest unit of a battery capable of storing energy that consists of a single anode/cathode pair.
Nameplate Capacity:	The energy storage limit of a new battery as designed and produced by the manufacturer.
Nominal Capacity:	The nameplate capacity multiplied by the State of Health (SOH). This is the actual, usable capacity of the battery or battery pack – i.e. the “new” nameplate capacity.
Pack (see Battery Pack):	
Relaxed Conditions:	Conditions at which a battery or battery pack must be subjected to in order to make standard, consistent measurements: open-circuit (no current flow), ambient room temperature, and having enough time elapse such that the measured voltage does not change with time (on the order of hours).
State of Charge:	The relative amount (% or fraction) of remaining capacity stored in the battery or battery pack, as compared to the nominal capacity, under relaxed conditions.
State of Discharge:	The relative amount (% or fraction) of used capacity as the result of discharge in the battery or battery pack, as compared to the nominal capacity, under relaxed conditions.
State of Health:	The relative amount (% or fraction) of remaining capacity that can be utilized for energy storage, as compared to the nameplate capacity, under relaxed conditions. Example: A 60Ah battery that can only hold 55Ah of energy has a State of Health of 0.917 or 91.7%. Typically, a state of health exceeding 80% constitutes a functioning battery.