The cost of behind-the-meter energy storage

What is a behind-the-meter battery energy storage system?
Introduction Behind-the-meter (BTM) battery energy storage systems (BESS) are undergoing the early stages of rapid, widespread deployment. An accurate understanding of their costs and benefits is relevant to analysis and decision-making in a variety of contexts, ranging from a costumer's purchase decision to energy system modeling.

What is NREL's behind-the-meter storage analysis research?
NREL's behind-the-meter storage analysis research focuses on technologies that minimize the costs and grid impacts of electrification for consumers by balancing peak energy demands, integrating EV chargers, and generating electricity on-site. Photo by Werner Slocum, NREL

Does the Army have a battery energy storage system at Fort Carson?
In 2019,the Army successfully deployed a behind-the-meter battery energy storage system(BTM BESS) at Fort Carson. The battery,along with an existing solar photovoltaic system,was dispatched to reduce demand charges and is projected to shave an estimated $500,000 off Fort Carson's utility bill each year.

How to calculate installed cost of BTM Bess?
Thus, my preferred specification for predicting the installed cost of BTM BESS is as follows: (5) ln (C i) = ? t s + ? 1 ln (E i) + ? 2 ln (P i) + ? 1 ln (E i) 2 + ? 2 ln (P i) 2 + ? 3 ln (E i) ln (P i) + ? 1 A C i + ? 2 D C i + ? 3 ln (w t c) + e i

What determines the cycling degradation rate of a charging station?
Cycling degradation rate is predominantly a function of temperature and depth of discharge(DOD). More data will help to identify a more complex model,capturing both convex and concave fade behaviors. For a corner charging station,the utility rate structure has a more significant impact on results than climate.

How many kilowatt-hours of energy can be added to a Bess?
With M C E,the interpretation is that exactly one kilowatt-hourof energy capacity is to be added; the extent to which such an addition extends discharge duration will vary with the power rating of the BESS. Table E.18. Notation and variable definitions for the derivation of Eq. (9).

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