

# **Evaluation of Battery Technologies for Specific Energy Storage Applications: a Case Study based on Key Technical Parameters**

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There are numerous battery technologies that are competing for their share in applications such as automotive and electric grid. End users looking to use batteries find it challenging to pick the right battery for their applications. Investors find it an onerous task to invest in a battery technology when they are approached by several emerging battery companies each claiming the best performance in the market. A methodology that utilizes the knowledge of technical parameters associated with the batteries and matches them with the required application will be extremely useful for investors and end-users in making informed decisions. Similarly a methodology to choose battery technologies for a given application based on their technical merits is of utmost importance.

This paper reviews key battery parameters such as energy density, power density, nominal voltage, discharge time, cycle life, safety etc to determine their importance in specific storage applications. A case study explaining frequency regulation application in grid storage is used for evaluating different batteries on the basis of technical parameters.

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