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(54) **SYSTEMS AND METHODS FOR
PEAK-CLIPPING AND LOAD-SHIFTING
ENERGY STORAGE DISPATCH CONTROL
STRATEGIES FOR EVENT-BASED DEMAND
RESPONSE**

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(57) **ABSTRACT**

A system applies optimal peak-clipping (PC) and load-shifting (LS) control strategies of a Li-ion BESS at a large industrial facility with and without enrollment in the electrical utility company's event-based DR program. The optimally sized BESSs and discounted payback periods are determined for both control strategies with and without event-based DR enrollment. Additional optimization can be performed to reduce an environmental impact of using the BESS. Comparisons between the PC and LS control strategies' operations show that for the same sized Li-ion BESS with DR enrollment, the LS control strategy achieves more revenue in DR events and by leveraging the energy-price arbitrage.

