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# Distributed energy storage control

## Overview

How do distributed energy storage device units (ESUs) reduce service period?

The distributed energy storage device units (ESUs) in a DC energy storage power station (ESS) suffer the problems of overcharged and undercharged with uncertain initial state of charge (SOC), which may reduce the service period of ESUs. To address this problem, a distributed secondary control based on diffusion strategy is proposed.

What is the energy storage discharge power?

In the first stage (t = 0–20 s), the energy storage discharge power is 8 kW. In the second stage (t = 20–30 s), the energy storage system discharge power increases to 10 kW. During the third stage (t = 30–35 s), the discharge power decreases to 6 kW. In the fourth stage (t = 35–45 s), the discharge power further decreases to 1 kW.

How much power does an energy storage system use?

The initial load power is 18 kW, which is reduced by 5–13 kW at 35 s, and further reduced by 5–8 kW at 45 s. In the first stage (t = 0–20 s), the energy storage discharge power is 8 kW. In the second stage (t = 20–30 s), the energy storage system discharge power increases to 10 kW.

What is the difference between decentralized control system and distributed control system?

While, in general, the decentralized control system adopts droop control, which results in a steady-state errors of the output voltage . The distributed control method overcomes the shortcomings of both decentralized control system and centralized control system .

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