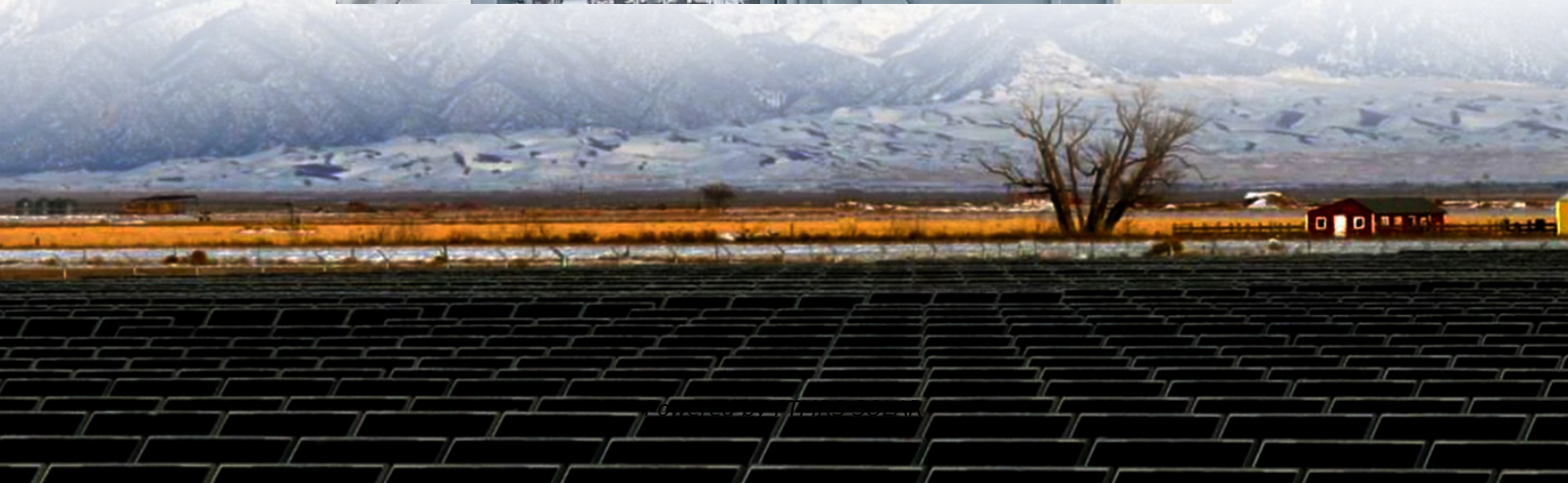


Inherent costs of solar container storage capacity configuration





Overview

- Model of renewables with storage in 4 locations over 20 years with hourly resolution.

How does storage energy capacity affect cost-minimized systems?

As storage energy capacity costs rise, the installed capacity of wind or solar generation relative to both storage energy capacity and plant output power generally increases for cost-minimized systems (Figures 4 and S49-S51).

How much does a storage energy capacity cost?

We estimate that cost-competitively meeting baseload demand 100% of the time requires storage energy capacity costs below \$20/kWh. If other sources meet demand 5% of the time, electricity costs fall and the energy capacity cost target rises to \$150/kWh.

How does storage energy capacity affect solar power?

As storage energy capacity costs increase, the solar power plant size increases (B), optimal storage duration decreases (C), and storage power capacity relative to output power increases (D). Solar cost of ownership is estimated as \$1,000/kW for all three cases, and the EAF is 100%.

How to optimize energy storage capacity in wind-solar-storage power station?

Based on the actual data of wind-solar-storage power station, the energy storage capacity optimization configuration is simulated by using the above maximum net income model, and the optimal planning value of energy storage capacity is obtained, and the sensitivity analysis of scheduling deviation assessment cost is carried out.



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