Cost-effectiveness analysis of earthquake-resistant photovoltaic containers for emergency command

Can life cycle cost analysis be used in photovoltaic systems?

Solar energy,especially through photovoltaic systems,is a widespread and eco-friendly renewable source. Integrating life cycle cost analysis (LCCA) optimizes economic,environmental,and performance aspects for a sustainable approach. Despite growing interest,literature lacks a comprehensive review on LCCA implementation in photovoltaic systems.

What drives the cost-effectiveness of earthquake risk reduction?

Our review reveals that the key drivers of the cost-effectiveness of earthquake risk reduction are the building occupancy class(e.g.,hospital,school,or residential and commercial),the location (e.g.,high or moderate seismic hazard risk),and the performance target (e.g.,life safety,immediate occupancy).

Does LCOE measure cost-effectiveness of solar PV systems?

The LCOE for System- 3 was found to be 0.033 $/kWh, indicating its cost-effectiveness in electricity generation compared to other integrated systems (Yang et al. 2019). Table 13 shows the economic analysis of solar PV systems through LCCA highlights the importance of using LCOE to measure long-term cost-effectiveness.

Can benefit-cost analysis inform earthquake risk reduction decisions?

Author manuscript; available in PMC: 2024 Oct 8. This paper reviews the state of the art in using benefit-cost analysis (BCA) to inform earthquake risk reduction decisions by building owners and policymakers. The goal is to provide a roadmap for the application and future development of BCA methods and tools for earthquake risk reduction.

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This research seeks to fill the gap in current studies by evaluating the seismic per-formance of super high-rise buildings with integrated photovoltaic systems. The find-ings aim to provide valuable ...

Resilient Solar Photovoltaics As the leading laboratory focusing on renewable energy solutions, NLR is prioritizing research on the resilience of solar photovoltaic (PV) systems.

Considering the importance of timeliness and accessibility, a hyperparameter optimization model is proposed to address the assessment of disaster losses in power systems on ...

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Abstract Natural disasters frequently disrupt electrical infrastructure, creating critical challenges for

emergency response, healthcare delivery, and community recovery. Portable solar photovoltaic (PV) ...

Purpose Solar energy, especially through photovoltaic systems, is a widespread and eco-friendly renewable source. Integrating life cycle cost analysis (LCCA) optimizes economic, ...

PV panels involve the conversion of light into electric energy by harnessing the photovoltaic effect within semiconducting materials [[14], [15], [16]]. Notably, conventional rigid PV ...

Emergency preparedness planning should incorporate solar PV into integrated emergency, climate adaptation and resilience strategies for effective implementation. Public-private ...

The tent cities and container cities already established in the earthquake zone are primarily built in areas with grid access for electricity. For this reason, installing solar systems in these areas, which will be ...

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