

What is inter-office energy storage?

The project is a collaboration between the Department of Energy's Vehicle Technologies Office, Building Technologies Office, and Solar Energy Technologies Office to provide foundational science for cost-effective design and operation of hybrid thermal and electrochemical energy storage systems.

What is thermal energy storage?

Thermal energy storage (TES) is a critical enabler for the large-scale deployment of renewable energy and transition to a decarbonized building stock and energy system by 2050.

Is thermal energy storage a building decarbonization resource?

NREL is significantly advancing the viability of thermal energy storage (TES) as a building decarbonization resource for a highly renewable energy future. Through industry partnerships, NREL researchers address technical barriers to deployment and widespread adoption of TES in buildings.

What are the benefits of thermal energy storage?

Advances in thermal energy storage would lead to increased energy savings, higher performing and more affordable heat pumps, flexibility for shedding and shifting building loads, and improved thermal comfort of occupants.

What is the future of energy storage?

In addition to the U.S. government's climate goals, the growth of electric vehicle usage, increased deployment of variable renewable generation, and declining costs of storage technologies are among other drivers of expected future growth of the energy storage market.

Why is storage important in a building?

Storage sited at buildings can serve as important resources to promote grid reliability and flexibility, increase renewable penetration, and increase energy resilience. Current thermally driven loads make up more than 45% of the annual electrical energy consumed on-site in residential and commercial buildings (Figure 1).

The Building Technologies Office (BTO) conducts research, development, and demonstration activities to accelerate the adoption of cost-effective technologies, techniques, tools, and services that enable high-performing, cost-efficient, ...

This, along with negligible self-discharge as energy is stored in chemical bonds, makes them uniquely suited as compact, stand-alone solutions for daily-seasonal energy storage in ...

2017. Air-conditioning (AC) systems are the most common energy consuming equipment in commercial buildings in Malaysia. An Ice Thermal Storage (ITS) application is capable of reducing the power

consumption of the air ...

Stor4Build is a new consortium on energy storage for buildings that will accelerate the growth, optimization, and deployment of storage technologies. The consortium will be co-led by the U.S. Department of ...

The energy consumption of office buildings is an important part, accounting for 30% of the sub-sector [52]. However, for zero-energy office buildings, there is still a lack of ...

Lead Performer: North Dakota State University - Fargo, ND; Partners: Montana State University - Bozeman, MT, Oak Ridge National Laboratory - Oak Ridge, TN, Idaho National Laboratory - ...

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