

Executive Summary

These are the proceedings of a workshop to address Energy Storage Systems (ESS) in the built environment, including installation and firefighting practices. The summary observations provide key observations from discussions and presentations and are organized into 5 categories:

- General
- Hazard Characteristics
- Standards
- Built-In Fire Protection
- Manual Fire Fighting

Electrical ESS are generally proliferating in the marketplace, with uses such as supporting alternative energy applications (e.g. photovoltaic systems, wind turbines, etc.) in a variety of building types. Systems have a diversity of configurations and variability of factors with unique features. One unique hazard is stranded electrical energy which presents both a shock hazard to personnel and potential re-ignition of the battery.

This workshop was focused on discussion to help guide the building regulatory community and fire departments in evaluating ESS technology, the applications for the installation of ESS and inform firefighting practices. Breakout groups addressed questions on three aspects of ESS in the built environment: building design features such as ventilation and fire separation, built-in fire protection systems including detection and suppression, and manual fire fighting practices including overhaul.

Post-fire operations pose one of the largest concerns and is a current gap in research because of stranded energy within the battery. Standard energy poses electrical and re-ignition hazards to responders and salvage personnel. The extended timeline of incidents and responsibilities of safe removal and disposal need to be addressed.