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Danger of LFP BESS

Lithium iron phosphate (LFP) batteries are generally considered safer than other lithium-ion chemistries due to their enhanced thermal stability. However, incidents involving LFP-based battery energy storage systems (BESS) have occurred, highlighting that no battery technology is entirely risk-free.

Notable Incidents Involving LFP-Based BESS

Victorian Big Battery Fire (Geelong, Australia â€“ July 2021)

System: Tesla Megapack (LFP chemistry)

Details: During initial testing, a coolant leak in one Megapack module led to a fire that spread to an adjacent unit. The blaze burned for nearly four days before extinguishing naturally.

Bouldercombe Battery Project Fire (Queensland, Australia â€“ September 2023)

System: Tesla Megapack 2 (LFP chemistry)

Details: A fire originated in the alternating current section, spreading to one Megapack module and damaging an adjacent unit. The remaining 36 modules resumed operation shortly after.

Beijing Rooftop Solar BESS Explosion (China â€“ April 2021)

System: 25 MWh LFP-based BESS

Incident Overview

On April 16, 2021, a significant fire and subsequent explosion occurred at the Jimei Home Dahongmen Energy Storage Power Station in Beijing's Fengtai District. This facility was a 25 MWh DC photovoltaic-storage-charging integrated station, utilizing LFP battery technology supplied by Guoxuan High-Tech. The project was developed and operated by Beijing Fuweisi Oil & Gas Co., Ltd.

Cause of the Fire and Explosion

An official investigation determined that the fire originated from an internal short circuit within an LFP battery module in the South Building's battery room. This fault led to thermal runaway, causing the battery to catch fire. The combustion released flammable gases, including hydrogen, methane, carbon monoxide, and dimethyl carbonate vapor. These gases traveled through a cable trench to the North Building, where they accumulated. An electrical spark in the North Building ignited the gas mixture, resulting in an explosion equivalent to 26 kilograms of TNT.

Compass says the LFP batteries are safer, BUT THEY ARE NOT RISK FREE since they can still have thermal runaway as the above examples show. Putting this LFP BESS using Tesla Megapacks near where I live is still dangerous, can explode and emit toxic gases I have asthma and if I breath any of the toxic smoke these batteries would emit during a fire, it can permanently damage my ability to breath comfortably making the rest of my life utterly miserable. LFP batteries may be safer, but still they can still have thermal runaway and expose me to toxic gases that could make me short of breath for the rest of my life! Do not put this in my neighborhood!