

Energy Storage Safety Monitor

October 2019

Recent lithium-ion battery storage fire incidents

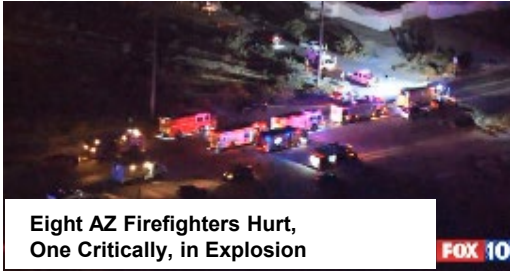


Photo: Fox News

Arizona 2MW / 2MWh Energy Storage Facility, USA April 2019

"The McMicken disaster unfolded in two distinct but related events. First, a single battery rack caught fire and burned — an occurrence that battery engineers refer to as thermal runaway. Second, an explosion rocked the enclosure when first responders opened the door.

The parties have not released the cause of the fire, but they quickly identified where it occurred: one particular rack, containing 14 battery modules. The monitoring systems detected a voltage drop across those modules, followed by an increase in temperature." ---[Greentech Media](#)



Photo: Korea Fire Department, [chuneng.bjx.com](#)

Chungnam Solar Station, South Korea August 2019

"[T]he system caught fire two days after increasing the state-of-charge to 95% from 70%. The cause of the fire is not yet clear, but the battery supplier, LG Chem Ltd., requested all storage sites equipped with their batteries lower the SOC back to 70%." ---[Bloomberg New Energy Finance](#)



Photo: Korea Fire Department, [nengyuenjie.net](#)

Gangwon Pyeongchang 40MW / 21MWh, South Korea September 2019

"The cause of the fire is under investigation." ---[nengyuanjie.net](#)

As of
September 2019:

27

fire incidents
between 2017 -2019

203+ MWh
affected

Fire-hazards not limited to stationary energy storage



Photo: li-b.cn

Electric Bus Explosion, China August 2018

An electric bus exploded while in a tunnel in eastern China due to a battery fault.

Source: <https://www.newsflare.com/video/234049/crime-accidents/battery-fault-causes-electric-bus-to-explode-in-chinese-tunnel>



Photo: City of Bergen Fire Department

Battery Fire on Diesel-Electric Passenger Ferry, Norway October 2019

Norwegian authorities are warning ship-owners and operators about the dangers associated with lithium-ion battery systems after a fire and subsequent gas explosion on board a diesel-electric ferry in Norway.

Source: <https://www.iims.org.uk/norwegian-maritime-authority-issues-warning-about-lithium-ion-power-following-ferry-fire-and-explosion/>

Lithium-ion battery storage fire incidents

Project	Country	MW	MWh	Application	Incident Date
APS Flagstaff Energy Storage Project	USA	1.5	-	Peak management	Dec-12
MOTIE Gochang Energy Storage Pilot Project	Korea	2	4	RE integration	Aug-17
KEPCO Gyeongsan Energy Storage Project Phase II	Korea	24	8.6	Frequency regulation	May-18
CNPV Power Korea Gunsan Saemangeum Energy Storage Project	Korea	-	19	RE integration	Jun-18
DaeMyoung GEC Yeongam Energy Storage Project	Korea	4	15	RE integration	Jun-18
Asia Paper Sejong Energy Storage Project	Korea	-	18	Peak management	Jul-18
DaeMyoung GEC Geochang Energy Storage Project	Korea	9.6	9.6	RE integration	Jul-18
Haenam Songji Energy Storage Project	Korea	-	3	RE integration	Jul-18
Jiangsu Grid-side ESS Substation (LFP Battery)	China	1.7	-	Peak management	Aug-18
KEPCO Jeju Energy Storage Project	Korea	-	0.18	RE integration	Sep-18
Taeon Energy Storage Project	Korea	-	6	RE integration	Sep-18
Yeongdong Energy Storage Project	Korea	-	6	RE integration	Sep-18
KEPCO Shin-Yongin Energy Storage 24 Project	Korea	24	18	Frequency regulation	Oct-18
Mirae Solar Energy Mungyeong Energy Storage Project	Korea	-	-	RE integration	Nov-18
Cheonan Dongnam Energy Storage Project	Korea	-	-	RE integration	Nov-18
Gwanghyun Yeongju Energy Storage Project	Korea	-	-	RE integration	Nov-18
Gangwon Samcheok Energy Storage Project	Korea	-	-	RE integration	Dec-18
Asia Cement Jecheon Energy Storage Project	Korea	1.6	9.3	Peak management	Dec-18
Daesung Industrial Gases Ulsan Energy Storage Project	Korea	10	46.7	Peak management	Jan-19
Jangsu Energy Storage Project	Korea	-	-	RE integration	Jan-19
KISWIRE Yangsan factory Energy Storage Project Phase I	Korea	0.5	3.3	Peak management	Jan-19
Wando Shinji Energy Storage Project	Korea	-	-	RE integration	Jan-19
APS McMicken Energy Storage	USA	2	2	RE integration	Apr-19
Chungnam Solar Station	Korea	-	-	RE integration	Aug-19
Gangwon Pyeongchang Wind Farm	Korea	40	21	RE integration	Sep-19

Source: BNEF, Greentech Media, chuneng.bjx.com

Additional Resources

Regulator says lithium-ion batteries create “unacceptable risks”

<https://pv-magazine-usa.com/2019/08/08/lithium-ion-not-prudent-and-create-unacceptable-risks/>

The Arizona Battery Explosion Is Changing Conventional Wisdom on Safety

<https://www.greentechmedia.com/articles/read/arizona-battery-explosion-conventional-wisdom-safety>

US National Fire Protection Association (NFPA) 855: Standard for the Installation of Stationary Energy Storage Systems

<https://www.nfpa.org/codes-and-standards/all-codes-and-standards/list-of-codes-and-standards/detail?code=855>

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