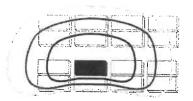
## ' ∀BESS Failure Event Database

This is a public resource for documenting publicly-available data on battery energy storage failure events from around the world. Information included is available in the linked public documents. If there is a public event that is not included in the BESS Fire Event Database, please email the relevant information and link to supporting info to our Storage Safety email (mailto:Storage-Safety@epri.com).

If you would like to be notified when a new event is added to this database or are interested in other EPRI energy storage safety research resources and opportunities please reach out to our Storage Safety email (mailto:Storage-Safety@epri.com).



## **Stationary Energy Storage Failure Events**

This table tracks utility and C&I scale energy storage failure events with publicly available information.

Note: Missing values in this table reflect unknowns.

Show 50 🗸 e	ntries	The second	h			Se	Export <del>v</del>		
Location	Energy (MWh)	Power (MW)	Module Type	Application	Installation	Event Date	System Age (yr)	State During Accident	Source
US, PA, Millvale			SimpliPhi Power (LFP)	Solar Integration	Urban	30 Јапшагу 2023	N	Operational	WTAE (https:// www.wfae.com article/millvale- ire-sprezzatura -food-energy-h ub/42708022)
South Korea, Jeollanam-do, Yeongam-gun, Geumjeong- myeon	251			Solar Integration	Rural	27 December 2022	1.8	Operational	E2News.com (http://www.e2n ews.com/news/ articleView.htm !?idxno=24934 5)
South Korea, Jeollanam-do, Damyang-gun, Mujeong-myeon, Deokgok-ri	9.1	2.5	Samsung SDI	Solar Integration	Rural	8 December 2022	5.5	Operational	E2News.com (http://www.e2n ews.com/news/ articleView.htm l?idxno=24862 5)
China, Hainan	50	25	Ruipu	Solar Integration		20 October 2022	0	Commissioning	china5e.com (h ttps://www.chin a5e.com/news/ news-1142303- 0.html)
JS, CA, Moss anding	73C	182.5	Tesla	Energy Shifting, Ancillary Services	Substation	20 September 2022	0.5	Operational	KSBW News (h ttps://www.ksb w.com/amp/arti cle/fire-battery- storage-facility- moss-landing/4 1293594)
South Korea, ncheon		103		Energy Shifting	Factory	6 September 2022		Operational	Teller Report (h ttps://www.telle rreport.com/tec h/2022-09-06-fi re-at-hyundai-s teel-plant-in-inc heonflames- and-black-smo

Location	Energy (MWh)	Power (MW)	Module Type	Application	Installation	Event Date	System Age (yr)	State During Accident	Source
									ke-rising.SkbN bb7Vej.html)
US, CA, Rio Dell			Lead Acid	Solar Integration / Backup	Rural	3 August 2022	4	Operational	KRCR (https://k rcrtv.com/north- coast-news/eur eka-local-news/ battery-storage -container-expl odes-rocking-ri o-dell-rv-park)
US, AZ, Chandler	40	10	LG Chem [NMC]		Substation	18 April 2022	3	Operational	AZ Central (htt ps://www.azcen tral.com/story/ money/busines s/energy/2022/ 04/21/fire-crew s-tend-massive -smoldering-bat tery-chandler-f acility/7405430 001/)
US, CA, Valley Center	560	140	LG Energy Solution		Substation	5 April 2022	0.2	Operational	Valley Road Runner (https:// www.valleycent er.com/articles/ sprinklers-quick ly-douse-terra- gen-fire/)
Longjing, Taichung City, Taiwan	1	1		Solar Integration	Power Plant	30 March 2022	2	Operational	Economic Daily (https://money- udn-com.transl ate.goog/mone y/story/11799/6 204797? x tr sl=zh-CN& x t r_tl=en& x tr hl=en& x tr_pt o=wapp)
US, CA, Moss Landing	400	100	LG Energy Solution	Solar Integration	Power Plant	13 February 2022	1.	Operational	KSBW News (h ttps://www.ksb w.com/article/s econd-battery- malfunction-in-l ess-than-6-mo nths-reported-a t-moss-landing- power-plant/39 083568)
South Korea, Gunwi-gun, Gyeongsangbuk- do	1.5	0.45	LG Energy Solution	Solar integration	Rural	17 January 2022	3	Operation. Fully charged	E2News (http s://www-e2new s-com.translat e.goog/news/ar ticleView.html?i dxno=239023& x tr sl=auto& x tr tl=en& x tr hl=en-US& x tr pto=wap p)

	Location	Energy (MWh)	Power (MW)	Module Type	Application	Installation	Event Date	System Age (yr)	State During Accident	Source
	outh Korea, am-gu, Ulsan	50	10	SK Innovation	Peak Load Reduction	Urban	12 January 2022	2	Operational	E2News (http s://www-e2new s-com.translat e.goog/news/ar ticle/view.html?i dxno=238938& x tr sl=auto& x tr tl=en& x tr hl=en-US& x tr pto=wap p)
	S, CA, Moss anding	1,200	300	LG Energy Solution	Solar Integration	Power Plant	4 September 2021	0.8		Vistra (https://in vestor.vistracor p.com/news?ite m=197)
	ustralia, Victoria, eelong	450	300	Testa	Grid Stability	Rural	30 July 2021	0	Construction, Commissioning	ABC News (htt ps://www.abc.n et.au/news/202 1-07-30/tesla-b attery-fire-moor abool-geelong/ 100337488)
<u>U</u> S	S, IL, LaSalle	72	72	LFP	Frequency Regulation	Rural	19 July 2021	1.6		The Times (http s://www.shawlo cal.com/myweb times/news/loc al/2021/07/19/n o-evacuations-f or-battery-fire-a t-energy-storag e-facility-east-o f-grand-ridge/)
	rmany, uhardenberg	5	5	[LFP]	Solar Integration and Frequency Regulation	Indoor/Hangar	18 July 2021	5		RBB 24 (http s://www.rbb24. de/politik/beitra g/2021/07/bran denburg-neuha rdenberg-brand schutz-batterie- solaranlage-feu erwehr.html)
	Jlouparis, New edonia, France				Solar Integration	Rural	13 July 2021			FranceTVInfo.fr (https://la1ere.f rancetvinfo.fr/n ouvellecaledoni e/province-sud/ boulouparis/ce ntrale-photovolt aique-helio-a-b oulouparis-les- consequences- de-I-explosion- 1059016.html)
US	MI, Standish				Demand Charge Mgmt	Substation	19 April 2021	0	Installation	WSGW (https:// www.wsgw.co m/standish-batt ery-installation- fire-causes-she lter-in-place-no

Location	Ene.gy (\lambda 1 \lambda h)	Power (MW)	Module Type	Application	Installation	Event Date	System Age (yr)	State During Accident	Source
China, Beijing	25		Gotion High-Tech [LFP]	Solar Integration	Commerce Area	16 April 2021	2	Construction, Commissioning	-adverse-condit ions-found/) CTIF Accident Analysis (http s://www.ctif.or g/news/acciden t-analysis-beijin g-lithium-batter y-explosion-whi ch-killed-two-fir efighters)
Australia, Bohle Plains	8	4	Tesla			7 April 2021	1.2		Townsville Bulletin (https:// www.townsville bulletin.com.a u/subscribe/ne ws/1/?sourceC ode=TBWEB WRE170_a_G GL&dest=http s%3A%2F%2F www.townsville bulletin.com.a u%2Fnews%2 Ftownsville%2 Ffire-damages- yurikas-battery- facility-in-bohle -plains%2Fnew s-story%2F442 b8c00b6df5690 e772b168d98b 1579&memtyp e=anonymous &mode=premiu m)
South Korea, Hongseong			LG Energy Solution	Solar Integration		6 April 2021	3		Business Korea (http://w ww.businessko rea.co.kr/news/ articleView.htm I?idxno=64241)
Gogyeong-myeon, Gyeongsangbuk- do, South Korea	4		LG Energy Solution	Solar Integration		11 March 2021			Newspim (http s://www-newspi m-com.translat e.goog/news/vi ew/202103110 01212? x tr sl =auto&_x tr_tl =en&_x tr_hl= en-US)
France, Ariege	0.5	0.5			Substation	1 December 2020			FranceTVInfo.fr (https://france3 -regions.francet vinfo.fr/occitani e/ariege/foix/ba tteries-au-lithiu m-prennent-feu x-container-arie

Location	Energy (MWh)	Power (MW)	Module Type	Application	Installation	Event Date	System Age (yr)	State During Accident	Source
					••••			***************************************	ge-1900866.ht ml)
UK, Liverpool	10	20	LG Chem [NMC]	Frequency Regulation	Substation	15 September 2020	1.5		Energy Storage News (https://www.en ergy-storage.n ews/news/fire-a t-20mw-uk-batt ery-storage-pla nt-in-liverpool)
South Korea, Haenam	1.8	0.5		Solar Integration	Field	27 May 2020	2.2		E2News.com (http://www.e2n ews.com/news/ articleVlew.htm l?idxno=22279 4)
Australia, Brisbane			(LFP)	Solar Integration		17 March 2020	6.7		Brisbane Times (https://www.brisbanetimes.com.au/national/queensland/firefighter-injured-in-overnight-blaze-at-griffith-university-campus-20200316-p54aet.html)
South Korea, North Jeolla, Jangsu	1			Solar Integration	Mountains	26 May 2019	1	Charged, discharging	MOTIE Investigation, June 2019 (htt p://www.motie. go.kr/motie/ne/ presse/press2/ bbs/bbsView.d o?bbs_cd_n=8 1&bbs_seq_n= 161771)
South Korea, North Gyeongsang, Chilgok	3.7			Solar Integration	Mountains	4 May 2019	2.2	Charged, inactive	MOTIE Investigation, June 2019 (htt p://www.motie. go.kr/motie/ne/ presse/press2/ bbs/bbsView.d o?bbs_cd_n=8 1&bbs_seq_n= 161771)
US, A <u>Z,</u> Surprise	2	2	LG Chem [NMC]	Volt Reg., PQ, Solar int.	Substation	19 April 2019	2		APS (https://w ww.aps.com/e n/About/Our-C ompany/Newsr oom/Articles/E guipment-failur e-at-McMicken- Battery-Facility)
US, OR, Tualatin		- = =	Powin Energy	Manufacturing/Testing		11 April 2019	0		Oregon Live (ht tps://www.oreg onlive.com/was hingtoncounty/

Location	Energy (MWh)	Power (MW)	Module Type	Application	Installation	Event Date	System Age (yr)	State During Accident	Source
		en en propriet per						* No. 2010004 40	2019/04/fire-br eaks-out-during -battery-test-at- tualatin-wareho use.html)
South Korea, Ulsan	46.8			Demand Charge Mgmt	Factory	21 January 2019	0.6	Charged, inactive	MOTIE Investigation, June 2019 (htt p://www.motie. go.kr/motie/ne/ presse/press2/ bbs/bbsView.d o?bbs_cd_n=8 1&bbs_seq_n= 161771)
South Korea, North Jeolla, Jangsu	2.5			Solar Integration	Mountains	15 January 2019	0.8	Charged, inactive	MOTIE Investigation, June 2019 (htt p://www.motie. go.kr/motie/ne/ presse/press2/ bbs/bbsView.d o?bbs_cd_n=8 1&bbs_seq_n= 161771)
South Korea, South Gyeongsangnam, Yangsan	3.3			Demand Charge Mgmt	Factory	14 January 2019	0.8	Charged, inactive	MOTIE Investigation, June 2019 (htt p://www.motie. go.kr/motie/ne/ presse/press2/ bbs/bbsView.d o?bbs_cd_n=8 1&bbs_seq_n= 161771)
South Korea, South Jeolla, Wando	5.2			Solar Integration	Mountains	14 January 2019	1.2	Charging	MOTIE Investigation. June 2019 (htt p://www.motie. go.kr/motie/ne/ presse/press2/ bbs/bbsView.d o?bbs_cd_n=8 1&bbs_seq_n= 161771)
South Korea, Gangwon, Samcheok	2.7			Solar Integration	Mountains	22 December 2018	1	Charged, inactive	MOTIE Investigation, June 2019 (htt p://www.motie. go.kr/motie/ne/ presse/press2/ bbs/bbsView.d o?bbs_cd_n=8 1&bbs_seq_n= 161771)
South Korea, North Chungcheong, Jecheon	9.3	10-7 LT - 10-10 LT - 1		Demand Charge Mgmt	Mountains	17 December 2018	1	Charged, inactive	MOTIE Investigation, June 2019 (htt p://www.motie. go.kr/motie/ne/

Location	Ene y (M:Ah)	Power (MW)	Module Type	Application	Installation	Event Date	System Age (yr)	State During Accident	Source
		1 - 1						1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	presse/press2/ bbs/bbsView.d o?bbs_cd_n=8 1&bbs_seq_n= 161771)
South Korea, South Gyeongsang, Geochang	1.0			Solar Integration	Mountains	21 November 2018	0.6	Charged, inactive	MOTIE Investigation, June 2019 (htt p://www.motie. go.kr/motie/ne/ presse/press2/ bbs/bbs/view.d o?bbs_cd_n=8 1&bbs_seq_n= 161771)
South Korea, Gyeongsangbuk- do, Mungyeong	4.2			Solar Integration	Mountains	21 November 2018	0.9	Charged, inactive	MOTIE Investigation, June 2019 (htt p://www.motie. go.kr/motie/ne/ presse/press2/ bbs/bbsView.d o?bbs_cd_n=8 1&bbs_seq_n= 161771)
South Korea, North Gyeongsang, Yeongju	3.7			Solar Integration	Mountains	12 November 2018	0.8	Charged, inactive	MOTIE Investigation, June 2019 (htt p://www.motie. go.kr/motie/ne/ presse/press2/ bbs/bbsView.d o?bbs_cd_n=8 1&bbs_seq_n= 161771)
South Korea, South Chungcheong, Cheonan	1.2			Solar Integration	Mountains	12 November 2018	0.9	Charged, inactive	MOTIE Investigation, June 2019 (htt p://www.motie. go.kr/motie/ne/ presse/press2/ bbs/bbsView.d o?bbs_cd_n=8 1&bbs_seq_n= 161771)
South Korea, Gyeonggi, Yongin	17.7			Frequency Regulation	Factory	18 October 2018	2.6	Maintenance	MOTIE Investigation, June 2019 (htt p://www.motie. go.kr/motie/ne/ presse/press2/ bbs/bbsView.d o?bbs_cd_n=8 1&bbs_seq_n= 161771)
South Korea, Jeju	0.2			Solar Integration		14 September 2018	4	Charging	MOTIE Investigation, June 2019 (htt p://www.motie. go.kr/motie/ne/
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Location	Energy (MWh)	Power (MW)	Module Type	Application	Installation	Event Date	System Age (yr)	State During Accident	Source
4 4 4									presse/press2/ bbs/bbsView.d o?bbs_cd_n=8 1&bbs_seq_n= 161771)
South Korea, Chungcheongnam, Taean	6			Solar Integration	Waterfront	7 September 2018	0	Installation	MOTIE Investigation, June 2019 (htt p://www.motie. go.kr/motie/ne/ presse/press2/ bbs/bbsView.d o?bbs_cd_n=8 1&bbs_seq_n= 161771)
South Korea, Chungcheongbuk- do, Yeongdong	6			Solar Integration	Mountains	1 September 2018	0.7	Charged, inactive	MOTIE Investigation, June 2019 (htt p://www.motie. go.kr/motie/ne/ presse/press2/ bbs/bbsView.d o?bbs_cd_n=8 1&bbs_seq_n= 161771)
South Korea, Sejong	18			Demand Charge Mgmt	Factory	28 July 2018	0	Installation	MOTIE Investigation, June 2019 (htt p://www.motie. go.kr/motie/ne/ presse/press2/ bbs/bbsView.d o?bbs_cd_n=8 1&bbs_sed_n= 161771)
South Korea, South Gyeongsang, Geochang	9.7			Wind Integration	Mountains	21 July 2018	1.6	Charged, inactive	MOTIE Investigation, June 2019 (htt p://www.motie. go.kr/motie/ne/ presse/press2/ bbs/bbsView.d o?bbs_cd_n=8 1&bbs_seq_n= 161771)
South Korea, South Jeolla, Haenam	3			Solar Integration	Waterfront	12 July 2018	0.6	Charged, inactive	MOTIE Investigation, June 2019 (htt p://www.motie. go.kr/motie/ne/ presse/press2/ bbs/bbsView.d o?bbs_cd_n=8 1&bbs_seq_n= 161771)
Sputh Korea, North Jeolla, Gunsan	19			Solar Integration	Waterfront	15 June 2018	0.5	Charged, inactive	MOTIE Investigation, June 2019 (htt p://www.motie. go.kr/motie/ne/
shares a mare a	Mar. 1		***		A COMPANY OF THE RESIDENCE OF THE PARTY OF T	ent ettin ation betilen	·········		of these to be be compared to the payon payon by the contract of

Location	Energy (MWh)	Power (MW)	Module Type	Application	Installation	Event Date	System Age (yr)	State During Accident	Source
									presse/press2/ bbs/bbsView.d o?bbs_cd_n=8 1&bbs_seq_n= 161771)
South Korea, South Jeolla, Yeongam	14	The state		Wind Integration	Mountains	2 June 2018	2.4	Maintenance	MOTIE Investigation, June 2019 (htt p://www.motie. go.kr/motie/ne/ presse/press2/ bbs/bbsView.d o?bbs_cd_n=8 1&bbs_seq_n= 161771)
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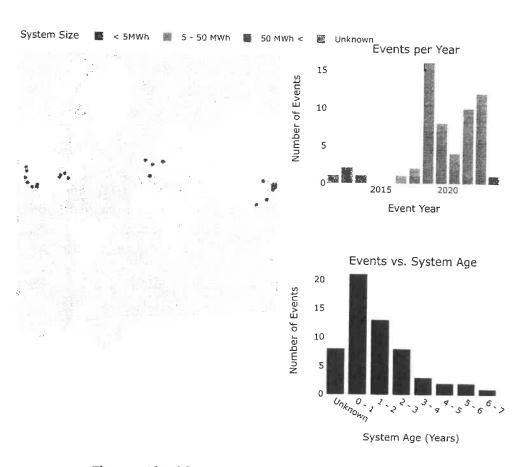


Figure 1. A breakdown of the stationary energy storage failure events from the above table.

## **Other Energy Storage Failure Events**

This table tracks other energy storage failure events for scenarios that do not fit the criteria of the table above. This could include energy storage failures in settings like electric transportation, recycling, manufacturing, etc.

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Location	Setting	Capacity (MWh)	Capacity (MW)	Operator / Integrator	Event Date	System Age (yr)	State During Accident	Description	Source
France, Rouen	Warehouse				16 January 2023		Storage	A fire spread through a warehouse containing thousands of lithium ion batteries.	the deep dive (https://thede epdive.ca/hug e-fire-breaks- out-at-a-frenc h-warehouse- holding-thous ands-of-lithiu m-batteries/)
US, CA, Baker	Electric Vehicle Charging Station			Tesla	1 January 2023		Operational	This Megapack on a trailersystem is used to boost charging infrastructure at busy supercharger stations during peak times.	Electrek (http s://electrek.c o/2023/01/04/ tesla-mobile-s upercharger- megapack-ca ught-on-fire/)
Germany, Kaufbeuren	Battery test laboratory				3 November 2022		Testing	A battery exploded while undertest at an Intertek battery testing facility.	Aligau Newspaper (h ttps://www-ali gaeuer-zeitu ng-de.cdn.am pproject.org/ c/s/www.aliga euer-zeitung. de/aligaeu/ka ufbeuren/expl osion-in-kaufb euren-neugab lonz-batterie-t estlabor-in-di e-luft-gefloge n_arid-49037 8?type=amp)
Netherlands, Amsterdam	Maritime	0.7		EST- Floattech	25 July 2022	1	In transit / operation	Battery fire on Diesel-Electric hybrid river boat	The Maritime Executive (htt ps://maritime- executive.co m/article/river -cruise-ship-e vacuated-afte r-possible-bat tery-explosio n)
US, WI. Milwaukee	Hospital parking garage				21 June 2022		recycling bin	Container holding recycled batteries exploded in parking garage	WISN (https:// www.wisn.co m/article/batte ries-explode-i n-milwaukee- hospital-parki ng-garage/40 362133)
Sweden, Karlskoga	Warehouse				10 April 2022			A fire outside of a warehouse where a large number of batteries were being stored.	SVT Nyheter (https://www.s vt.se/nyheter/l okalt/orebro/d et-brinner-i-ett -batterilager-i-

Setting	Capacity (MWh)	Capacity (MW)	Operator / Integrator	Event Date	System Age (yr)	State During Accident	Description	Source
Manufact <sup>,</sup> ring			EcoPro BM	21 January 2022		Operational Manufacturing Facility		karlskoga-kraf tig-rok)  Korea JoongAng Daily (https:// koreajoongan gdaily.joins.co m/2022/01/2 1/national/soc ialAffairs/fire- cheongju-Eco Pro-BM/2022 01211743328 85.html)
On highway during transport				12 January 2022		during transportation		Jimu News (h ttps://news-cn hubei-com.tra nslate.goog/c ontent/2022-0 1/13/content 14407245.ht ml?_x_tr_sch =http&_x_tr_s l=auto&_x_tr_ tl=en&_x_tr_h l=en-US&_x_t
Warehouse			Superior Battery Inc.	2 July 2021				r_pto=wapp)  ABC (https://a bc7chicago.c om/morris-fire -update-batter y/10853284/)
Recyclir э			Friedman Recycling	16 March 2021				KOB (https://www.kob.com/albuquerque-news/lithium-battery-blamed-for-fire-at-albuquerque-recycling-plant/6044449/?utm_campaign=thumbnails&utm_medium-onsite&utm_source=zetaglobal)
	Manufacturing  On highway during transport  Warehouse	Manufacturing  On highway during transport  Warehouse	Manufacturing  On highway during transport  Warehouse	Manufacturing EcoPro BM  On highway during transport  Warehouse Superior Battery Inc.	Manufacturing  EcoPro BM January 2022  On highway during January 2022  Warehouse Superior 2 July Battery Inc. 2021	Manufacturing EcoPro BM January 2022  On highway during January 2022  Warehouse Superior 2 July Battery Inc. 2021  Friedman 16 March	Manufacturing  On highway during transport  On highway during transport  Setting (MWh) (MW) Integrator Date Age (yr) Accident  Date Age (yr) Accident  Operational Manufacturing Facility  12 January January 2022  Warehouse  Superior 2 July Battery Inc. 2021  Friedman 16 March	Manufecturing  EcoPro BM  Description  EcoPro BM  Description  Accident  21  Operational Manufacturing Facility  On highway during transport  Uniform transport  During Accident  21  Operational Manufacturing Facility  On highway during transport  Uniform transport  22  During Accident  During A

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