



WARNING

Authorized Service Provider Only.
Potential for fire or burning.
Do not disassemble, puncture,
heat, crush and burn.

Made in Thailand

4000 mAh



Li-ion

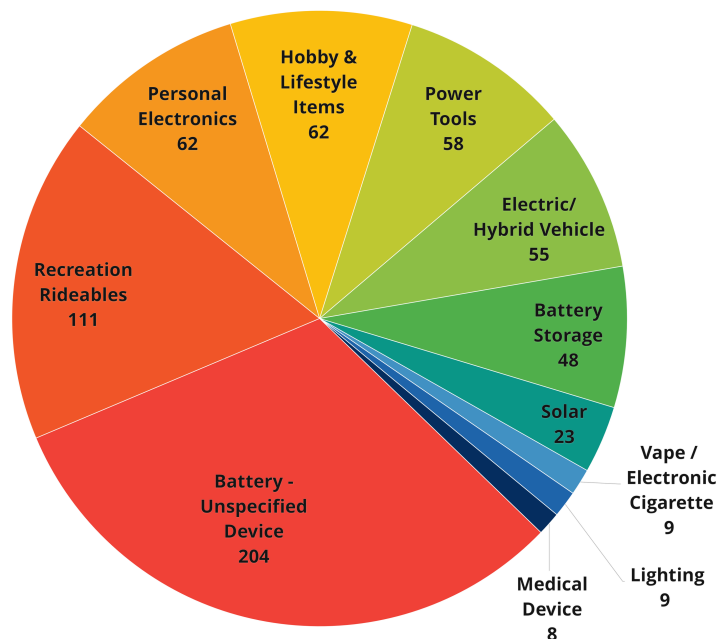
2020-2025

LITHIUM-ION BATTERY FIRES INCIDENT REPORT

OREGON STATE FIRE MARSHAL

OVERVIEW

FIGURE 1 | Lithium-Ion Battery Fires by Device Group



This report summarizes trends in Oregon fire incidents where lithium-ion batteries were confirmed or suspected to have played a role in igniting a fire or complicating firefighting operations. With these fires occurring more often and with greater intensity, the Oregon State Fire Marshal (OSFM) Center for Fire Analytics, Intelligence, and Research (the Center) conducted a qualitative review of fire report narratives from 2020–2025. Reports were sourced from the OSFM National Fire Incident Reporting System (NFIRS) database after submission by Oregon structural fire agencies.

What is Thermal Runaway?

Lithium-ion batteries pose a unique fire risk because of their chemistry*. Through a process known as thermal runaway, lithium-ion batteries can overheat and break down internally. As this occurs, damaged battery cells can ignite and spread heat to nearby cells, creating a self-accelerating cycle. In these conditions, compromised batteries may produce smoke, erupt in flames, or explode.

These fires can occur in many situations, often when a battery has been:

- Physically damaged by crushing, water exposure, or tampering
- Electrically damaged by overcharging or use of non-compatible charging equipment
- Exposed to extreme temperatures
- Affected by a manufacturing or product defect

Lithium-ion battery fires are especially hazardous because they generate high heat and may release toxic gases. Since these batteries are found in everyday electronics and vehicles, understanding their risks and proper disposal practices is essential for reducing fire hazards.

*National Fire Protection Association | For more information, visit nfpa.org/lithiumionsafety

Lithium-Ion Battery Fires

The OSFM Center identified 649 incidents involving lithium-ion batteries in Oregon from 2020–2025. The number of incidents increased by an average of 19% per year, rising from 74 in 2020 to 161 in 2025 (Figure 2). Overall, this represents a 118% increase across the six-year period.

The most frequently reported devices were e-bikes (44 incidents, 6.8%), scooters (43 incidents, 6.6%), and RC cars (42 incidents, 6.5%). Collectively, “recreational rideables,” including e-bikes, scooters, golf carts, and hoverboards, accounted for 111 incidents (17.2%; Figure 1). Fire agencies reported 55 incidents (8.5%) involving full-size electric or hybrid vehicles, including 40 fires involving fully electric vehicles.

Personal electronics such as cell phones, laptops, and Bluetooth speakers were involved in 62 incidents (9.6%). Hobby and lifestyle items—including RC cars, drones, and airsoft equipment—also accounted for 62 incidents (9.6%).

In 443 of the 649 incidents, reports included enough information to identify the device

type; 204 reports referenced a lithium-ion battery or charger without specifying the device (Table 1). Chargers alone were identified in 96 incidents (14.8%).

Over half of the incidents (336 fires, 51.1%) took place within a residential dwelling such as a 1-2 family home or apartment complex (Figure 3). Almost one quarter (155 fires, 23.3%) took place on a highway/street or within a parking garage, stemming either from an electric/hybrid vehicle fire or the ignition of a device within a vehicle. Examples include cell phones charging while plugged into the vehicle or a battery bank, as well as devices being stored in the trunk or bed of a vehicle.

Nearly 10% of incidents (63 fires) occurred in garbage or recycling trucks or facilities. These reports often described fires deep within refuse loads, typically caused by improperly discarded batteries or electronics placed in garbage, recycling, or shredding bins. Fires tended to start when material was compacted inside the truck or after it arrived at a disposal facility.

FIGURE 2 | Lithium-Ion Battery Fires in Oregon 2020-2025

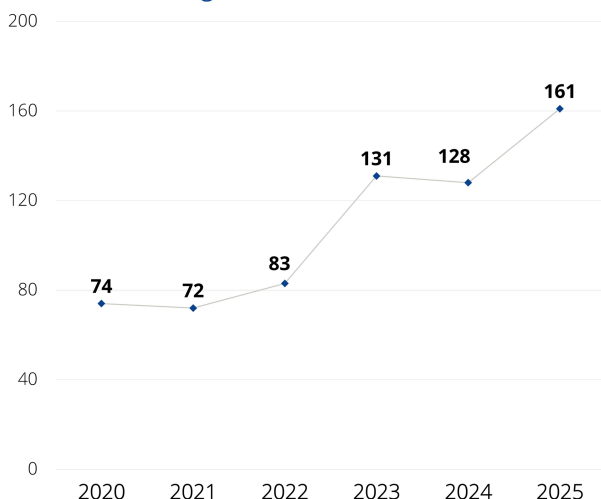


FIGURE 3 | Lithium-Ion Battery Fires by Property Type/Location

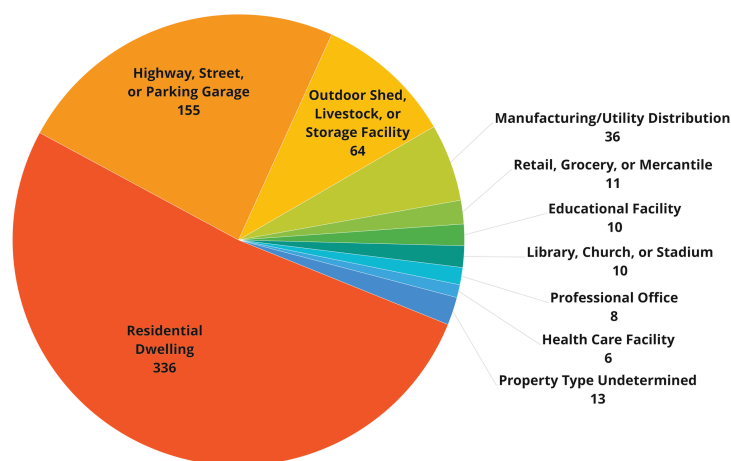


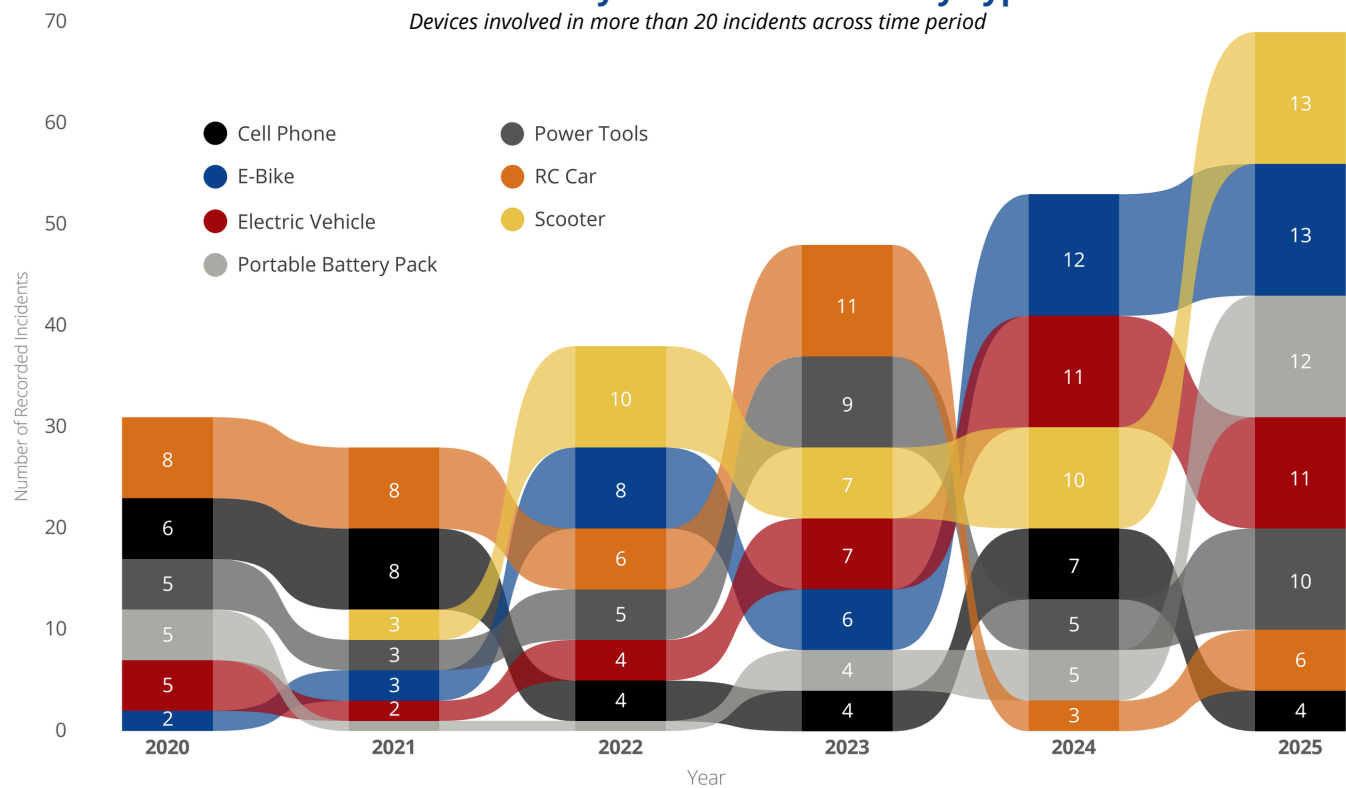
TABLE 1 | Lithium-Ion Battery Fires by Device Group

Device Group	2020	2021	2022	2023	2024	2025	Device Total
Recreation Rideables e.g. E-Bikes, Scooters, Golf Carts	6	8	19	20	25	33	111
Personal Electronics e.g. Cell Phones, Laptops, Tablets	11	13	7	8	13	10	62
Hobby & Lifestyle Items e.g. RC Cars, Drones, Airsoft	9	9	9	16	9	10	62
Power Tools e.g. Cordless Drills, Saws, Lawn Equipment	7	8	7	13	9	14	58
Electric/Hybrid Vehicles e.g. Personal Vehicles, Trucks	8	2	5	8	16	16	55
Battery Storage Devices e.g. Portable Battery Packs, Large Battery Banks	8	2	7	6	6	19	48
Solar Devices e.g. RV Solar Energy, Solar Lighting	4	2	3	5	5	4	23
Vapes e.g. e-Cigarettes, Vape Pens	-	-	1	2	4	2	9
Lighting Devices e.g. Flashlights, Headlamps, String Lights	1	-	3	2	2	1	9
Medical Devices e.g. Massage Guns, Electric Wheelchairs	-	1	2	5	-	-	8
Battery - Unspecified Device Specific device unable to be determined	20	27	20	46	39	52	204
Annual Total	74	72	83	131	128	161	649

LITHIUM-ION BATTERY FIRES | Devices by Involvement

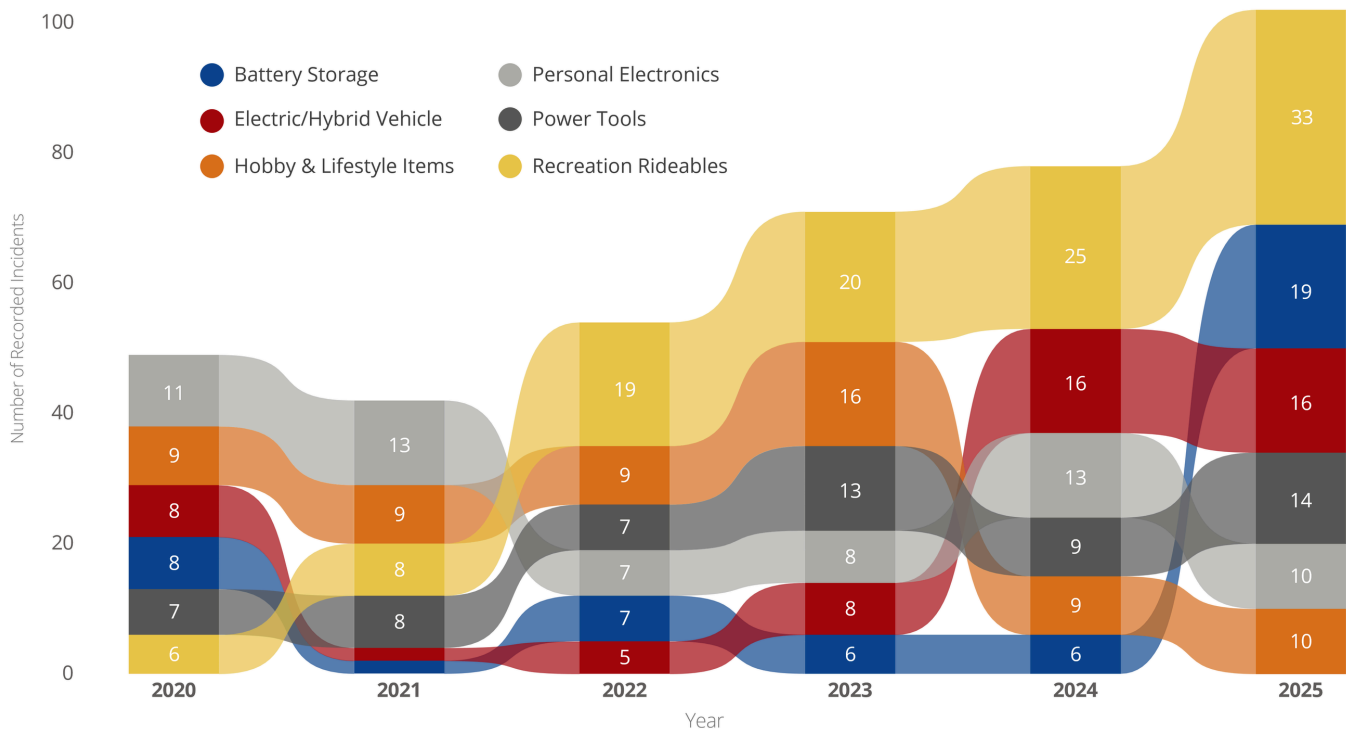
Most Commonly Identified Devices by Type

Devices involved in more than 20 incidents across time period



Most Commonly Identified Devices Groups

Devices involved in more than 40 incidents across time period



Methodology

The data source for this summary is the OSFM National Fire Incident Reporting System (NFIRS) database. Utilizing a qualitative review, analysts reviewed narrative descriptions from fire reports submitted between 2020 and 2025 to identify incidents where lithium-ion batteries were suspected or confirmed to have ignited a fire or significantly affected the firefighting response.

NFIRS added new data fields to classify lithium-ion battery involvement in late 2023. Although these fields are being used with increasing frequency, reviews showed they were only being utilized in about 10–15% of incidents where batteries were suspected to be involved. This likely reflects the complexity of these incidents and the many data fields available to describe contributing factors. A qualitative narrative review was conducted to better capture the current extent of lithium-ion battery fires in Oregon. To complete the qualitative review, all fire

reports and associated narratives, 2020–2025, were exported from the OSFM NFIRS repository, totaling 128,534 reports (an average of 21,422 per year). Analysts first used an AI-assisted keyword search to identify references to “batteries,” “lithium-ion batteries,” and “charging devices,” as well as rechargeable devices such as scooters, remote-controlled cars, and electric vehicles. Subsequent searches narrowed results by excluding non-electric vehicle fires. A secondary check was performed on excluded narratives to reduce false negatives. Analysts then read the remaining narratives to confirm whether a lithium-ion battery was suspected or confirmed as a cause or major factor. When a narrative provided details on the specific kind of device, that information was coded for analysis.

Importantly, this report reflects only incidents recorded by fire agencies in NFIRS narratives or in the *Equipment Involved in Ignition* field. Fires involving lithium-ion batteries that were not reported to NFIRS or lacked narrative detail are not included in these totals.

FIGURE 4 | Lithium-Ion Battery Involvement Identified in Fire Report Narratives

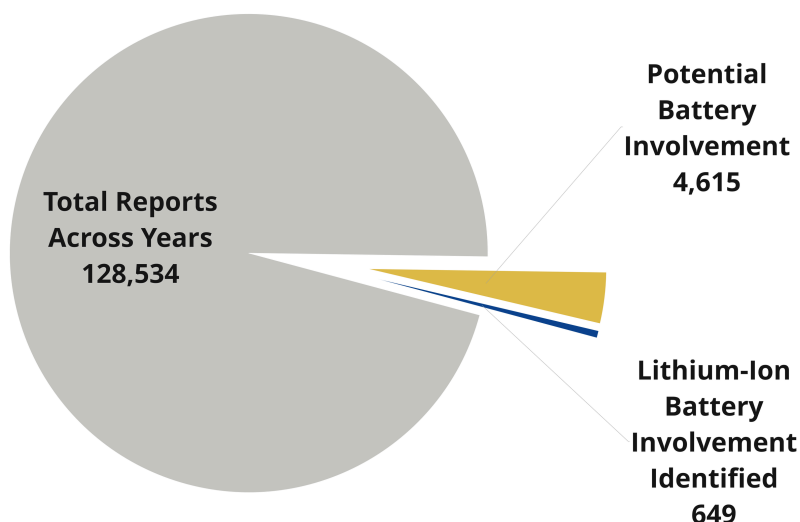


TABLE 2 | Lithium-Ion Battery Fires by Device Type

Device Group	2020	2021	2022	2023	2024	2025	Device Total
RECREATION RIDEABLES	6	8	19	20	25	33	111
E-BIKE	2	3	8	6	12	13	44
SCOOTER	-	3	10	7	10	13	43
GOLF CART	-	1	-	1	-	6	8
HOVERBOARD	2	-	1	1	2	1	7
SKATEBOARD	-	1	-	3	1	-	5
UTV	-	-	-	1	-	-	1
SOLO WHEEL	1	-	-	-	-	-	1
GO-CART	1	-	-	-	-	-	1
ATV	-	-	-	1	-	-	1
PERSONAL ELECTRONICS	11	13	7	8	13	10	62
CELL PHONE	6	8	4	4	7	4	33
LAPTOP	4	3	2	2	1	-	12
RADIO/STEREO	1	-	1	1	2	3	8
BLUETOOTH SPEAKER	-	1	-	1	2	1	5
TABLET	-	1	-	-	-	1	2
EAR BUDS	-	-	-	-	1	1	2
HOBBY & LIFESTYLE ITEMS	9	9	9	16	9	10	62
RC CAR	8	8	6	11	3	6	42
RC DRONE	-	1	1	1	2	1	6
AIRSOFT	1	-	-	-	2	-	3
CHILD'S TOY	-	-	-	-	-	2	2
CAMERA	-	-	-	1	-	1	2
RC PLANE	-	-	1	1	-	-	2
HEATED CLOTHING	-	-	-	1	1	-	2
FOOD DELIVERY ROBOT	-	-	1	-	-	-	1
COOLER	-	-	-	-	1	-	1
FISH FINDER	-	-	-	1	-	-	1
POWER TOOLS	7	8	7	13	9	14	58
GENERAL TOOLS	5	3	5	9	5	10	37
LAWN EQUIPMENT	1	3	1	2	2	3	12
VACUUM	1	2	1	2	2	1	9

TABLE 2 | Lithium-Ion Battery Fires by Device Type

Device Group	2020	2021	2022	2023	2024	2025	Device Total
ELECTRIC/HYBRID VEHICLE	8	2	5	8	16	16	55
ELECTRIC VEHICLE	5	2	4	7	11	11	40
HYBRID VEHICLE	3	-	1	1	5	5	15
BATTERY STORAGE	8	2	7	6	6	19	48
PORTABLE BATTERY PACK	5	1	1	4	5	12	28
CAR BATTERY JUMP START	3	1	3	2	1	6	16
BUILDING BATTERY BANK	-	-	3	-	-	1	4
SOLAR	4	2	3	5	5	4	23
RV BATTERY BANK	3	-	2	4	1	3	13
BUSINESS BATTERY BANK	-	2	-	1	1	-	4
HOME BATTERY BANK	1	-	-	-	2	-	3
FLAGPOLE LIGHT	-	-	-	-	1	-	1
STRAND LIGHTING	-	-	-	-	-	1	1
GARDEN LIGHT	-	-	1	-	-	-	1
VAPE	-	-	1	2	4	2	9
LIGHTING	1	-	3	2	2	1	9
FLASHLIGHT	-	-	2	-	1	1	4
ARTIFICIAL CANDLES	-	-	-	2	-	-	2
TWINKLE LIGHTS	-	-	1	-	1	-	2
SHELVING	1	-	-	-	-	-	1
MEDICAL DEVICE	-	1	2	5	-	-	8
MASSAGE GUN	-	-	1	2	-	-	3
DISINFECTANT SPRAYER	-	1	1	-	-	-	2
ELECTRIC WHEELCHAIR	-	-	-	1	-	-	1
PEDIATRIC NASAL ASPIRATOR	-	-	-	1	-	-	1
MEDICAL GURNEY	-	-	-	1	-	-	1
BATTERY - UNSPECIFIED DEVICE	20	27	20	46	39	52	204