Green Energy Worksites: Solar, Wind, Battery Storage and Worker Hazards Stats and Facts

FACTS

- **Green Energy Does Not Mean Low Hazard:** Solar, wind, and battery storage worksites share some of the most serious hazards in any industry — working at height, high-voltage electrical systems, arc flash, and lithium-ion fire risk.
- **Falls Are the Dominant Killer:** Solar installation takes place on rooftops in variable weather. Fall protection requirements are identical to construction — yet solar worksites are frequently cited by OSHA for missing guardrails, harnesses, and anchor points.
- **Wind Turbines Create Extreme At-Height Exposure:** Wind technicians climb internal tower ladders to nacelles hundreds of feet in the air multiple times per day. Fire departments cannot reach nacelle fires — burning debris becomes a ground-level hazard for workers below.
- **High Voltage Exists Throughout:** Solar arrays and battery storage systems operate at voltages capable of causing instant cardiac arrest. Arc flash from a solar array cannot be interrupted by a standard circuit breaker — panels generate electricity as long as there is light.
- **Battery Storage Fire Is Difficult to Extinguish:** Lithium-ion battery systems can enter thermal runaway and produce fires nearly impossible to suppress with conventional methods, releasing toxic gases including hydrogen fluoride.

STATS

- Around 6.4 percent of solar and wind workers reported witnessing a fatality on the job, while 7 percent of solar workers said they had seen a colleague die from a fall,

according to industry safety research published in 2025.

- Offshore wind sites saw a 75 percent year-on-year increase in injuries in 2024, with the Total Recordable Injury Rate climbing to 2.93 and the Lost Time Injury Frequency rising 19 percent.
- As of March 31, 2025, there were 5,818 documented wind turbine accidents globally, resulting in 180 fatalities and 672 injuries.
- OSHA cited Sunrun Installation Services Inc. for two repeat fall protection violations at two separate solar installation sites within weeks in 2024 — having cited the same company for similar violations in Massachusetts in 2022 and New Jersey in 2023.
- OSHA documents wind energy worker fatalities and serious injuries from falls, electrical shocks, arc flash fires, and crushing injuries — and notes fire departments cannot extinguish nacelle fires due to tower height.