SOLAR PROJECT SAFETY & SECURITY RISK ASSESSMENT FOR MULTIFAMILY HOUSING DEVELOPMENTS

Renew300

This table was developed by evaluating the potential safety and security risks to solar system assets, performance, residents, and staff. This document includes examples by risk category along with actions that can be deployed by solar system developers and/or property owners. While not comprehensive of every potential risk, this table provides a strong framework to build upon and describes many of the common issues that may occur over the long lifespan of a solar project.

Property owners might use this document as part of a Request for Proposals (RFP) for solar developers. Access additional helpful resources in the Multifamily Solar RFP Toolkit.

Risk Category	Type of Risk	Risk Description	Mitigation Category: Physical, Design, or Management	Risk Mitigation Strategies By Solar System Developer and/or Property Owner
Vandalism	Damage from On-Site Action (Rooftop Access)	Equipment damaged or defaced with the action originating from on-site access to the roof.	Design, Physical	Restrict access to "high-value" components like inverters. Create physical boundaries to the solar modules.
				Design and build elevated solar arrays that would be at least 8 feet above rooftop.
				Highly visible signage about electrical safety risks is both required and beneficial.
			Management	Proactive system monitoring will help identify issues (will show under-performance due to missing or damaged equipment).
				Micro-inverter use and functionality would provide panel-level tracking and increase solar electricity output overall, though typically with added costs.
	Damage from Off-Site Action (Adjacent Building)	Equipment damaged with the action originating from off-site access (e.g., aerial damage from adjacent buildings).	Design, Physical	Add netting or plexiglass above panels. Note that this could reduce solar electricity output.
Property Theft	Mounting Equipment	Ballasted systems run the risk of having their ballasts (e.g., cement blocks) stolen and used as a tool to cause vandalism to the solar modules, or to other property.	Design, Physical	Do not use ballasted, or hybrid ballasted with penetration, systems (i.e., use only systems secured via roof penetrations exclusively). Or, if using ballast, avoid sites seen as a high risk for theft. Avoid ballasted systems that would be easy to disassemble.
				Physically attach components with locking bolts.
				Highly visible signage about electrical safety risks is both required and beneficial.
	Solar Modules	Equipment could be stolen with the intent to re-sell it (likely for scrap).	Design, Physical	Physically attach components with locking bolts.
				Highly visible signage about electrical safety risks is both required and beneficial.
			Management	Proactive system monitoring will help identify theft quickly.
				Micro-inverter use and functionality would provide panel-level tracking and increase solar electricity output overall, though typically with added costs.
	Inverter	Inverter in electrical room could be stolen with the intent to sell it for its material value (brass, aluminum, copper, etc.).	Physical	Maintain locked access to electrical room and include highly visible signage about electrical safety risks.
				Inverters are mounted directly to the floor and/or wall.
	Conduit and Wiring	Equipment could be stolen with the intent to sell it for its material value (brass, aluminum, copper, etc.)	Design, Physical	Physically attach components with locking bolts.
				Secure conduit runs for cables, or use less valued materials like PVC.
				Highly visible signage about electrical safety risks is both required and beneficial.
			Management	Proactive system monitoring will help identify theft quickly.
Safety of Residents, Employees, Visitors, & Contractors	Electrical Hazard-Rooftop	Installation of additional electric equipment presents the potential for electric safety hazards if the equipment is not properly installed and secured.	Physical	Highly visible signage about electrical safety risks is both required and beneficial.
	Electrical Hazard-Interconnection	There are electrical shock hazards if interconnection equipment is not securely locked with posted signage of the hazards, to discourage uncertified personnel from operating it.	Physical	Lock access to all electrical equipment that does not have a requirement to be outside in case of emergency.
				Highly visible signage about electrical safety risks is both required and beneficial.
	Trip Hazard	Solar equipment, such as the solar modules or electrical conduit, will be located on the rooftop where they could become a tripping hazards if rooftop is accessible.	Physical	Clearly mark conduit runs or the locations of equipment that could create a tripping hazard.

Disclaimer: This resource is provided for informational purposes only. It is not intended to be a comprehensive study of all possible risks, nor are the risk mitigation steps all-inclusive. Solar Developers must make their own judgment of risks and establish an appropriate plan that mitigates safety and security issues that may arise.