



**Safety. Science. Transformation.™**

**The Honorable Kathleen James  
Vermont House of Representatives  
State House  
115 State St  
Montpelier, VT 05633-5301**

**RE: Safety Considerations for Plug-In Photovoltaic Equipment and Systems**

**January 16, 2025**

Dear Representative James:

I am writing to bring to your attention a recently published standard, UL 3700, developed by UL Solutions to address the safety hazards of plug-in photovoltaic (PIPV) systems. This standard was developed in conjunction with a review of the safety hazards of PIPV systems, which we detailed in a recent white paper. Given growing interest in PIPV, we wanted to share these resources and underscore our recommendation that legislation to permit or encourage use of these systems should require certification to UL 3700 to mitigate electrical safety hazards.

UL Solutions is a global safety science leader with roots that trace back to the advent of electricity in American homes and businesses. We provide rigorous testing, inspection, certification, and advisory services that help businesses innovate safely, and demonstrate compliance with standards and regulatory requirements. Our 130-year-plus history of working for a safer world today includes efforts to advance safety, security, and sustainability.

Plug-In Photovoltaic (PIPV) systems, also known as “balcony solar” or “plug-in solar” panels, are small-scale solar panels that are gaining popularity in the US. These products are generally lower cost than rooftop solar panels, portable, and have been marketed as “plug-and-play” systems that do not require installation by a professional electrician. In particular, these systems have been presented as roof-top solar alternatives for apartment dwellers who have balcony access.

In March 2025, the Utah legislature passed a law, H.B. 340, amending the state’s public utility code to exempt PIPV systems from the connection requirements that govern customer installation and use of distributed energy resource generation (e.g. rooftop solar

panels). Under H.B. 340, customers using PIPV systems need not seek approval from the utility, pay additional fees, or install additional equipment as long as the PIPV system has a maximum output of 1,200 watts or less, is designed to be connected to a building electrical system through a standard 120-volt AC outlet, meets the standards of the most recent version of the National Electrical Code (NEC), and is certified by “Underwriters Laboratories<sup>1</sup> or an equivalent nationally recognized testing laboratory.”

At the time of H.B. 340’s passage, there was no US standard for PPIV systems upon which to base certification. In response to Utah’s law, and the growing interest in these products, UL Solutions developed UL 3700, *Outline of Investigation for Interactive Plug-In PV (PIPV) Equipment and Systems*. Outlines of Investigation (OOI) are pre-consensus standards developed by UL Solutions to address gaps in standards for emerging technologies and trends. UL 3700, published in December 2025, provides construction, performance, marking, and installation requirements for these products.

To develop the OOI, UL Solutions reviewed PIPV systems, conducted safety science research, and published a corresponding white paper, [Interactions of Plug-In PV with Protection of Existing Power Systems](#). This paper explains in detail how PIPV, when plugged into existing electrical systems, can circumvent or degrade protective features required by the NEC and discusses the electrical safety hazards of the PIPV equipment itself. In brief, these hazards are overcurrent conditions, lack of ground fault circuit interrupter (GFCI) compatibility, and touch-safety concerns. The white paper also provides options for how these hazards can be mitigated.

UL 3700 addresses these hazards and provides a clear testing and certification framework for these products that is tailored to the US electrical safety and product certification requirements. It should be noted that UL 3700 requires special installation practices to mitigate the hazards discussed above.

We strongly encourage policymakers to require UL 3700 certification by a technically qualified and accredited organization as a condition for use of these systems. Doing so will support the use of technology that expands access to renewable energy to more people without compromising the electrical safety protections that Americans rely on to maintain safety. If you have questions on UL 3700 or the UL Solutions white paper on PIPV systems, please reach out to Meghan Housewright ([meghan.housewright@ul.com](mailto:meghan.housewright@ul.com); 202-530-6176), Government Affairs Lead, Safety and Security, for UL Solutions.

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<sup>1</sup> Underwriters Laboratories, d/b/a/ UL Solutions

Sincerely,

/s/ Derek Greenauer

Director, Government Affairs, Americas Region

UL Solutions