



April 4, 2023

Hon. Senator Mark Lawrence, Senate Chair
Hon. Representative Paige Zeigler, House Chair
Joint Standing Committee on Energy, Utilities, and Technology
100 State House Station
Augusta, Maine 04333

Re: L.D. 1232/HP 780 An Act to Increase Adoption of Solar Power in Maine

Dear Senator Lawrence, Representative Zeigler, and members of the Energy, Utilities, and Technology Committee:

On behalf of the over 3,500 members of the International Institute of Building Enclosure Consultants (IIBEC), and especially our 13 members in Maine, IIBEC respectfully requests that you oppose this legislation in its current form and instead allow the design professional, in consultation with the building owner, to decide if solar panels are appropriate for including in a new building's roof design.

IIBEC members come from a diverse group of design and construction industry companies, including hundreds of engineering firms, architecture companies, consultants, contractors, and product manufacturers. Our members specialize in design, investigation, repair, and management of roofing, exterior wall, and waterproofing systems. IIBEC members act as an advocate for the building on behalf of the owner or manager and ensures the building enclosure or roofing projects meet standards, codes, warranty requirements, and functionality required. IIBEC members are perfectly positioned to inform owners and managers about the benefits of including solar when it comes to designing or retrofitting a building, however not all buildings will be a good candidate for solar energy generation.

When designing a building enclosure for a structure that will stand for decades, a designer will make hundreds of decisions to ensure the roof system performs as intended. Informed decisions can only be made when evaluating the full range of environmental, societal, and economic impacts. Through application of the principles of sustainability, designers will meet the customer's expectations. However, arbitrary mandates, like the requirement included in this bill, can negatively impact the design process.

Solar Panels are not appropriate for every roof.

While many commercial roofs are low slope (i.e., basically flat), their size will be as varied as the businesses they serve. Most building roof systems are composed of multiple areas of differing sizes and shapes at different heights from the ground, some of which may shade other sections of the roof system during the daylight period, thus making a fixed solar panel inappropriate for that area. Nearby foliage can also shade roofs making them unsuitable for solar generation.

Additionally, a building's physical location may negatively impact its suitability for solar generation. For example, if a building is being constructed next to a taller building it is conceivable that the number of

prime solar hours that roof would receive per day could be substantially reduced due to shading from the taller building.

Increasing risk for owners, building personnel, and first responders.

Reducing emissions by incorporating solar energy generation into a project is a worthy goal, however, it is not without risk – risk that will be ultimately born by the building owner and those who must maintain the roof. The risk arises from the simple fact that electrical lines must be installed to power the units and carry the energy generated by each solar panel.

Electrical wires, receptacles, and connection boxes must be installed along with emergency power cut-off switches, also referred to as a solar safety disconnect switch. However, even when the power is cut to a solar panel, during daylight the cells will generate power as they are designed to do and if the power is off it will be released as heat. When workers are on the roof, care must be made to not come into contact with power lines and equipment or materials must also be prevented from making contact with electrical lines, equipment, or the solar panels. Additionally, solar ready areas can pose an electrification risk to workers moving around devices like a high-rise window cleaning platform, safety ropes and equipment, or when roof maintenance is being conducted in the area.

During calm weather, safety precautions will likely be very effective, but severe weather is when risk is at its highest for workers. Inspecting a roof after a severe weather event could include standing water and damaged power lines, if they were impacted during the event, could electrify the water. A well-designed electrical system would minimize this risk; however, it is still a risk and must be accounted for in operating procedures.

During a fire or other emergency, first responders' safety must also be taken into account. According to press reports of a 2013 incident in Delanco, New Jersey, volunteer fire crews discovered the roof of a burning warehouse was covered in solar panels, which forced them to change tactics. It took 29 hours to put out the flames at the Dietz & Watson warehouse, which was left gutted and smoldering in ruins. If there is concern with electrocution, then the emergency responder's ability to directly combat fires will be lessened and will result in greater damage and overall losses.

Structural costs increase.

Since Maine receives on average 50 to 70 inches of snow yearly, a roof designer might use dark colors to harness the building's temperature in conjunction with solar radiation to help melt the snow and speed its exodus from the roof. However, this design will not work for a solar zone where snow could be expected to accumulate on and around the solar panel units and the shade from solar panels would impair melting. As we have seen with the extreme weather events across the United States this past winter, significant snowfall events can damage commercial roofs – causing some to fail. For this reason, the building's roof must be built to withstand the additional weight of the solar units and potential snow accumulation, which will increase the cost of the building.

Incentives over mandates.

The recently passed Inflation Reduction Act (IRA) could have included provisions similar to the arbitrary 40% roof space mandate in the legislation under review, but leadership in the White House and Congress determined that incentives would work better than mandates. Incentives, if constructed properly, generally work better than mandates. In the case of the IRA, according to the Department of Energy, solar systems that are placed in service in 2022 or later and begin construction before 2033 are eligible for a 30% investment tax credit or a 2.75 ¢/kWh PTC if they meet labor requirements issued by the Treasury Department or are under 1 megawatt (MW) in size. The IRA includes numerous incentives that will encourage owners constructing or renovating commercial buildings to reduce energy use by increasing efficiencies and improvements to the building enclosure and, in the case of the solar investment tax credit, decide to include solar as a component of building at the beginning of the process.

I hope you are now aware of a few of the factors that must be considered when a building's enclosure is being designed and that mandating an arbitrary amount of space to be made solar-ready is not appropriate public policy. We urge you to allow the incentives included in the IRA to work to achieve the goals of increasing solar usage rather than arbitrary mandates. For these reasons, we would respectfully encourage the committee to vote, "ought not to pass" on L.D. 1232.

Sincerely,

A handwritten signature in black ink, appearing to read "Brian", with a stylized flourish at the end.

Brian Pallasch, CAE
CEO/EVP

cc: Senator Nicole Grohoski
Senator Matthew Harrington
Representative Mark Babin
Representative James Boyle
Representative Larry Dunphy
Representative Steven Foster
Representative Valli Geiger
Representative Christopher Kessler
Representative Reagan Paul
Representative Walter Runte
Representative Sophia Warren