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The below answer sheet is for your own self-assessment. Please keep your completed questionnaires and answers on file for your record. These do not need to be sent to CPD Live. CPD-Live will send you certificate.

Building Integrated Photovoltaics (BIPVs) Specifying Solar Panel Systems for Commercial & Industrial Projects





1. How does Building Integrated Photovoltaic (BIPV) differ from traditional solar panels in terms of aesthetics and functionality?

BIPV systems are integrated directly into the building structure, providing a seamless, aesthetically pleasing design that also contributes to weather protection, insulation, and energy generation. Traditional solar panels, on the other hand, are typically stand-alone installations focused solely on energy production and are less integrated with the building's aesthetics.

2. What is the impact of elevated temperatures on the efficiency of solar arrays, and how can it be mitigated?

High temperatures decrease solar module efficiency by lowering voltage output. Ensuring sufficient ventilation and airflow around panels helps dissipate heat, maintaining cooler module temperatures and improving energy performance.

3. Why is weight an important factor to consider when designing solar installations for commercial and industrial buildings?

Traditional solar panels add substantial weight, which may require structural reinforcements to prevent building damage. Lightweight BIPV systems reduce the structural load, thus reducing the need for extensive modifications and preserving roof integrity.

4. What factors should be considered when determining the capacity and performance requirements of a solar system for a commercial project?

Important factors include the building's specific energy consumption needs and usage patterns, available roof or facade space, expected sunlight exposure, financial constraints, and sustainability goals, such as achieving high Green Building certification ratings.

5. What are the advantages of incorporating solar shading solutions as part of BIPV design in commercial buildings?

Solar shading with BIPV reduces glare, lowers interior cooling loads, and enhances energy efficiency. This dual-purpose function supports energy savings and improves the comfort and usability of interior spaces in commercial buildings.

6. How does BIPV contribute to achieving net-zero energy goals in commercial and industrial buildings?

By integrating renewable energy generation directly into the building structure, BIPV systems reduce reliance on grid power, lower carbon emissions, and help offset a significant portion of a building's energy consumption.