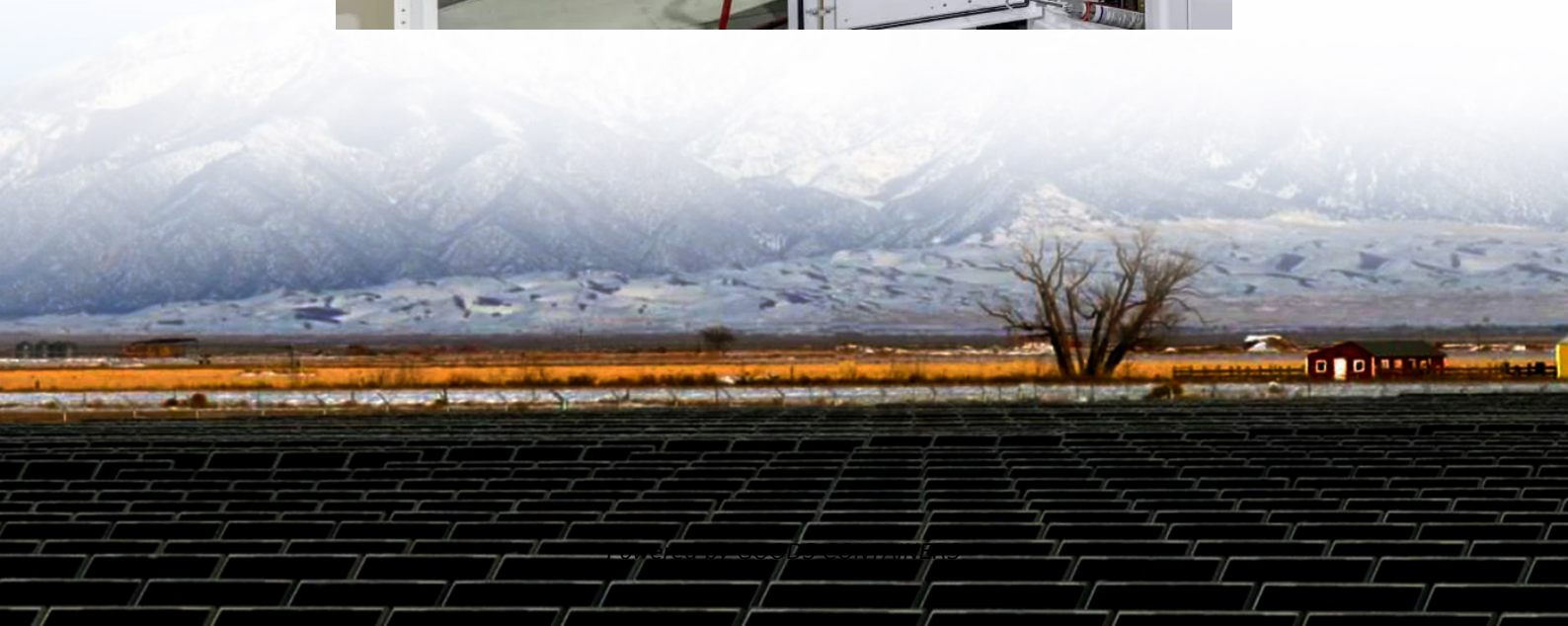


Solar glass wafer





Overview

How efficient are silicon wafer-based solar cells?

Silicon wafer-based solar cells dominate commercial solar cell manufacture, accounting for about 86% of the terrestrial solar cell industry. For monocrystalline and polycrystalline silicon solar cells, the commercial module efficiency is 21.5% and 16.2% [10-12].

Why do solar cells need wafer etching?

Finally, the wafering process step, in combination with the material quality, defines the mechanical properties of the final solar cell, as the wafering process can damage the wafer's surface. This damage has to be etched not only to increase the mechanical stability but also to obtain good cell efficiencies.

Can wire sawing produce crystalline wafers for solar cells?

Wire sawing will remain the dominant method of producing crystalline wafers for solar cells, at least for the near future. Recent research efforts have kept their focus on reducing the wafer thickness and kerf, with both approaches aiming to produce the same amount of solar cells with less silicon material usage.

Why is wafering important for solar cells?

Another relevant field of research is the reduction of the wafer thickness in order to produce more wafers per kilogram silicon. Finally, the wafering process step, in combination with the material quality, defines the mechanical properties of the final solar cell, as the wafering process can damage the wafer's surface.

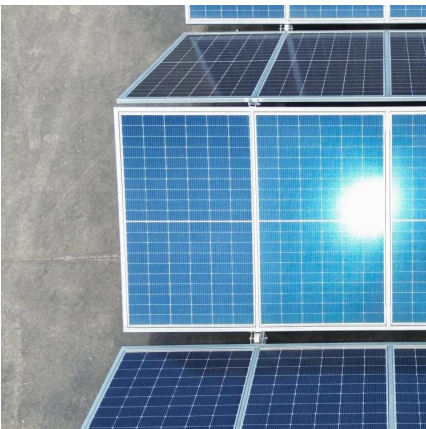


Solar glass wafer



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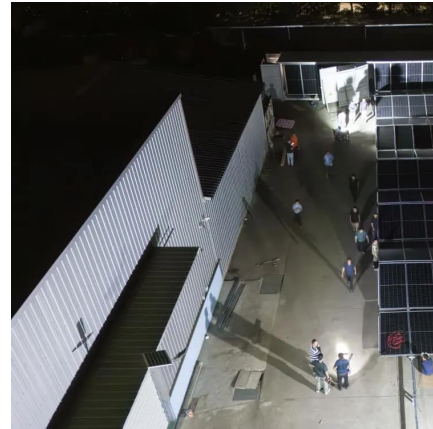
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