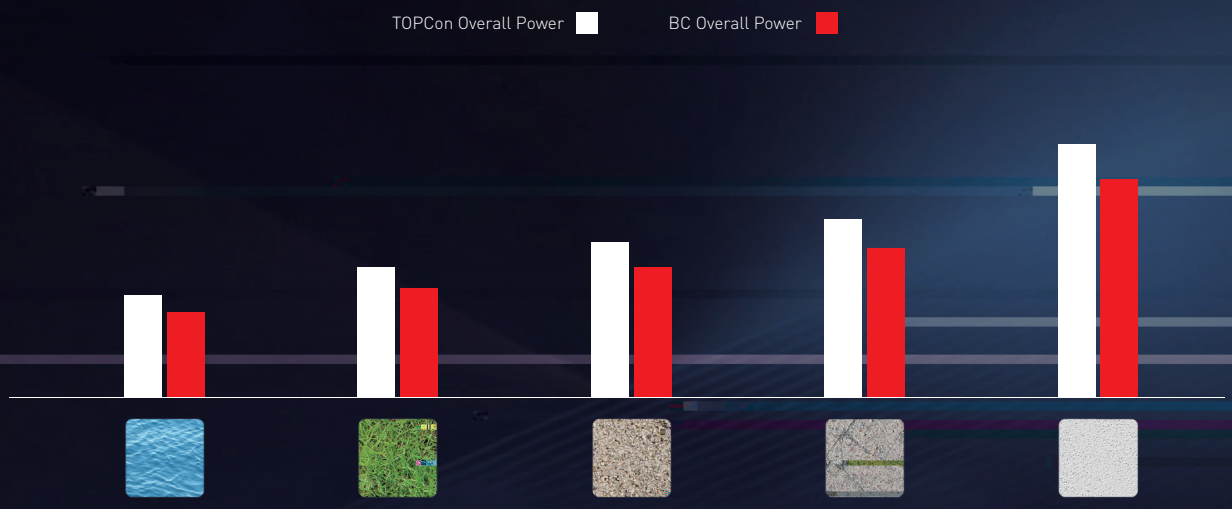
Tiger Neo 3.0: Incomparable Bifaciality

Neo 3.0 is demonstrating an exceptional bifaciality of 85±5% in mass production. This enhancement increases the utilisation of ambient low-light conditions for energy generation, thereby increasing the module's energy yield per watt and extending its effective operating hours.

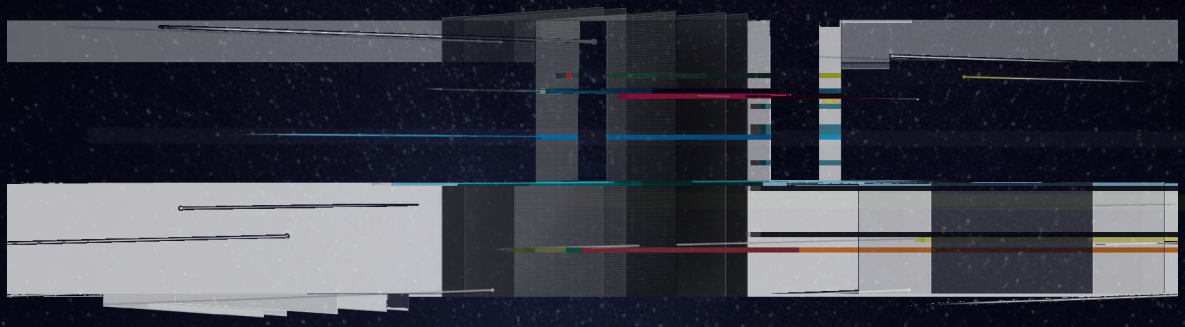
This innovative approach was primarily enabled by an optimized texturing and passivation contact technology. By further optimizing rear surface texture, anti-reflective coating,rear-side doping passivation and base resistivity of TOPCon baseline, Neo 3.0 increases light-absorption efficiency and the generation of photogenerated carriers.

The bifaciality of solar cells plays a crucial role in determining their overall energy generation performance. Bifacial modules benefit from increased energy output by allowing additional sunlight to reach the rear of the cell under specific environmental condition, particularly in high-reflectance environments where enhanced rear-side light absorption can significantly boost power output. BC module bifaciality is typically around 70-75%, whereas TOPCon cell modules have achieved rates exceeding 80%, now Neo 3.0 raises the bar again. Neo 3.0 is demonstrating an exceptional bifaciality of **85±5%** in mass production.



Albedo 2~5%	Albedo 10~20%	Albedo 22~25%	Albedo 30~33%	Albedo 80~85%
670+670*85%*5%=698.5W	670+670*85%*6%=704.2W	670+670*85%*8%=715.6W	670+670*85%*10%=727.0W	670+670*85%*15%=755.4W
670+670*75%*5%=695.1W	670+670*75%*6%=700.2W	670+670*75%*8%=710.2W	670+670*75%*10%=720.3W	670+670*75%*15%=745.4W

Whereas BC cell which has a relatively complex architecture and electrode areas on the back side, any optimization of light absorption becomes much more difficult. Though BC is also improving its bifacility, owing to the inherent limitations of the rear surface structure, attaining high bifaciality in BC cell remains a considerable challenge. Due to the electrode region retained in the rear side surface, BC is naturally weaker on bifacility. The increased thickness of BC cell considering the more complicated fabrication of its rear surface introduces more defects and less light absorption of back side compared to TOPCon cells.



More and more real world projects highlighted the contribution of rear-side power which used to be underestimated, a comprehensive calculation that considers both front and rear power is not only more logical but also has been widely proved that it better reflects the real output and performance of solar panels. This makes sense, the optical properties of the rear side undoubtedly increase the total useable irradiance and efficiency behavior as function of the irradiance.

Neo 3.0 bifacial TOPCon photovoltaic modules are encapsulated with an impressive bifaciality of 85±5% and a power output of 650-670W. It is the highest bifaciality so far for commercialized solar cells and modules to the best knowledge.