

21 August 2019

How much of impact would a 25% weight decrease on a panel be to the industry?

Compared with dual glass bifacial, JinkoSolar's Swan reduces the weight by 25%. How much would this mean to the investors, developers, EPCs and O&M? Would it make much of a difference, or would the savings be significant enough to 100% shift to it? Will weight increase of glass-glass bifacial diminish its returns or offset the benefits of additional power generated from rear side?

There is an easy way to get a rough idea of what magnitude the savings are: saving 25% of weight per panel would reduce cost of BOS by 3%, mounting structure by 15%, labor by 20% and finally O&M by 5%.

Mounting structure heights should be raised to allow the rear surface to capture additional diffuse albedo light. Height between 1.0 – 1.5m is recommended as optimum. If using a fixed tilt mounting structure, a more aggressive tilt angle is common. This aggressive tilt angle aims to increase rear side exposure and promote diffuse albedo light; however, this will also increase the load experienced under high wind conditions. Thus the mounting structure and foundation requires new, specific and much costly designs to be solid enough to secure the heavier modules and greater wind loads expected. The greatest performance benefits for bifacial technology are seen when it is deployed in tracking systems. For single axis tracking system, 25% weight loss has been shown to provide superior alleviation over tracking system, as this does not require special design or strengthened material.

That is not the same case when speaking about the typical installation site . But if we consider harsh environment where the solar plant is located, such as mountain regions, offshore waterbodies, salt affected land, contaminated land, abandoned land, high building rooftop, car port, agriculture situations allowing crop growth underneath – basically remote areas which are difficult to access and that generally involve extremely high cost of labor and logistic, etc., the saving can easily be twice as much.

Future trends for bifacial include longer warranties (30 years) and reduced degradation rates, a very likely fall in price as well as weight.