

Shall we go for seasonal tilt?

Seasonal tilt often comes up during PV system design discussions as a potential way to increase energy yield. Adjusting module angles throughout the year can look attractive in energy yield simulations and PV performance modelling, particularly when comparing summer and winter production profiles. In theory, optimising tilt for lower sun angles in winter and higher angles in summer can help capture more irradiation. However, when looking at the full picture, the real-world benefits are usually marginal, especially in the UK where diffuse light dominates for much of the year and seasonal irradiation differences are less pronounced than in sunnier climates.

Modern solar layout software and PV simulation and modelling tools already allow designers to optimise fixed-tilt systems extremely well. By focusing on intelligent PV plant layout optimisation, detailed shading analysis for solar and effective electrical configuration optimisation, strong performance can be achieved without introducing mechanical complexity. When combined with bifacial module optimisation, careful row to row spacing and ground coverage ratio tuning, fixed-tilt designs can deliver excellent energy yields and reliable long-term performance.

From a plant performance optimisation and LCOE (Levelized Cost of Electricity/Energy) reduction strategies perspective, seasonal tilt introduces additional operational and maintenance complexity. Manual or semi-automated adjustments require site access, labour, downtime, and ongoing management, all of which increase O&M costs and operational risk. These factors can easily outweigh the small gains seen in annual yield, particularly on large commercial and utility-scale projects where simplicity and reliability are critical.

For most solar plant design projects, the priority should be on delivering construction-ready PV design through robust renewable energy design and solar engineering services. Seasonal tilt still has its place in niche or space-constrained applications, but for most sites, the real value lies in smart design optimisation, not moving parts. GreenEnco can deliver such smart design optimisation.

#CreatingABetterWorldInAChangingClimate #GreenEnco™ #PV #SeasonalTilt