Single-Axis and Dual-Axis Trackers

The Applicant's recent response [REP4-029, page 22] to the question of incident light helps to clarify the solar power confusion.

Mr Field's equation and illustration assumes that the panel will be horizontal when the sun is at 59 degrees, but the single axis tracker configuration includes light meters that will ensure the panels are orientated at an optimum angle to maximise the energy generation. The use of single axis tracker panels, by their nature, tracks the position of the sun every hour and helps to harness as much energy as possible by angling the modules at their optimum position.

Yes, Mr Field does assume that the panels will be horizontal when the sun is at 59°. Single-axis tracker (SAT) panels are tilted fully to the east in the early morning, then rotate throughout the day to reach fully west tilt in the late evening. At approximately midday on every day of the year the panels will be horizontal, whether the sun is at a maximum elevation of 59° (summer solstice) or 12° (winter solstice) or for any day in between. Light meters can do nothing to overcome the geometry of a fixed north-south axis.

The Applicant has mistakenly described dual-axis trackers, which can indeed be orientated in almost any direction. These use *light meters to ensure that the panels are orientated at an optimum angle to maximise the energy generation*. Dual-axis *tracker panels, by their nature, track the position of the sun to harness as much energy as possible by angling the modules at their optimum position*.

Single-axis trackers cannot behave like this. They are horizontal at midday.

Furthermore, the Applicant dismisses the conventional understanding of peak AC power. An examination of PV power profiles (available on various websites) should dispel the curious belief that for this (or indeed any) solar scheme, *a maximum 400MW alternating current would be exported at any point in time* [in subsequent paragraphs]. It should be beyond dispute that peak AC power occurs only in the middle of summer, near midday, with no cloud cover – not *at any point in time*.

This conflict with basic electrical principles is highly concerning.

These are not the technical contributions that one would expect from an experienced solar engineer.

On a related matter, we continue to wait for an explanation as to why East Yorkshire is best served by SAT, while BOOM's neighbouring Fenwick proposal will be best served by FSF.