

The reality of low power UK solar: the numbers don't stack up

The data says it all: solar power performs poorly in the UK climate. Building utility-scale solar facilities on huge tracts of good farmland is illogical and unjustifiable.

- > The government's latest efficiency data for UK solar installations reveals the most disappointing performance for years. **Despite a current national installed capacity of 17.8GW, solar power output in the UK climate averaged just 1.77GW last year – only 9.9% of its capacity.**
- > Department for Energy Security and Net Zero data published in April shows that the average for the last five years is not much better, with the **entire solar power fleet struggling to reach a little over 10% efficiency.** DESNZ data shows that **solar power is the worst performing renewable energy generator in the UK.**
- > Solar power in this country is now over-promising and under-delivering on a rapidly increasing scale, despite the fact that DESNZ data demonstrates beyond doubt the huge gap between solar power's 'nameplate' capacity and actual electricity output. The colossal ground-mounted solar **super schemes planned for construction on thousands of acres of UK farmland would ramp up solar capacity – but result in shockingly low average power output.**
- > **Even if the government's 2030 47GW solar capacity target is reached, UKSA analysis of the latest data suggests that solar would contribute less than 13% of the UK's total annual electricity supply – and with significant intermittency challenges.**
- > Analysis suggests that **solar developers are over-scaling schemes on vast tracts of farmland to make up for poor performance in the UK climate.** Maximising panel volumes allows them to secure profits from the low yields. Developers are able to **flood fields with millions of panels as the majority are cheap imports from China, where there are well known forced labour issues** within the supply chain, particularly around polysilicon, the key raw material of photovoltaic panels.
- > The **National Energy System Operator has announced that it may already be forced to order solar facility switch-offs this summer.** Solar power produces its highest yields when demand is lowest.
- > UKSA analysis shows that an area of **agricultural land bigger than Merseyside – or 800 traditional farms – would be taken out of food production if planned ground-mounted solar super schemes go ahead and join the smaller scale facilities** already operating in the UK. Many more solar proposals are in the pipeline.
- > Analysis reveals that cropland in specific regions is at risk – if ground-mounted schemes on farmland continue to be the first choice for solar power, then the **2030 solar capacity target would be met at a cost of around 2% of UK cropland**, putting food security at risk.
- > Despite the huge potential for solar on rooftops, car parks and other installation opportunities, the UK is projected to **build around 70% of the 2030 solar capacity target on farmland.** With one of the **worst rankings in the world for solar power potential, the UK cuts a lonely figure opting for aggressive agricultural land rollout** rather than built environment-based applications.

From an analysis and policy briefing produced by the UK Solar Alliance, with input from experts in energy and rural land use, Professor Peter Dobson OBE, Department of Engineering Science, University of Oxford, and Professor Michael Alder, Professor (Emeritus) in Rural Environment, University of Essex